

SCHOOL OF CIVIL ENGINEERING



JOINT HIGHWAY
RESEARCH PROJECT

JHRP-75-28

HISTORY OF THE INTERSTATE
SYSTEM IN INDIANA

VOLUME III - ROUTE HISTORY
Part I

David A. Ripple



PURDUE UNIVERSITY
INDIANA STATE HIGHWAY COMMISSION



Digitized by the Internet Archive
in 2011 with funding from

LYRASIS members and Sloan Foundation; Indiana Department of Transportation

Final Report

HISTORY OF THE INTERSTATE SYSTEM IN INDIANA

TO: J. F. McLaughlin, Director December 1, 1975
Joint Highway Research Project

FROM: H. L. Michael, Associate Director Project: C-36-64H
Joint Highway Research Project File: 3-5-8

Attached is the Final Report titled "History of the Interstate System in Indiana", authored by David A. Ripple a Graduate Instructor on our staff while conducting the research and authoring the Report. Professor W. L. Grecco, formerly of our staff, directed the study during its initial year and Professor Michael supervised it during the latter years and handled the lengthy review process. The Report has been reviewed by several personnel of the ISHC, including Mr. Walter Frick, and changes suggested by them have generally been made and are sincerely appreciated.

The History covers the period from the late 1930's through 1972. The Interstate System was not yet complete in 1972 and the period after 1972 is not reported herein. Perhaps it will be at a later date after the System is completed.

The Report is voluminous and therefore is issued in four (4) volumes as follows:

- | | |
|------------|---|
| Volume I | - Development of the National Program
(Chapters I thru IV) |
| Volume II | - Evolution of Policies and Standards
(Chapter V) |
| Volume III | - Route History
(Chapter VI) |
| Volume IV | - Cost, Funding and General Benefits
(Chapters VII and VIII) |

Another volume as an Appendix which is a detailed Table titled "Interstate Highway Construction Record" is also in preparation and will be issued at a later date. A brief summary of the entire history is also in preparation.

Each of the Volumes covers a part of the History and may be used separately as each is complete for the topic or topics covered. The entire set of four volumes provides an excellent in-depth reference document of the Interstate System history in Indiana and should be extremely valuable for many purposes. To my knowledge Indiana is the first state to prepare such a factual detailed history of the Interstate System.

Sincerely,

Harold L. Michael

Harold L. Michael
Associate Director

HLM:ms

cc:	W. L. Dolch	M. L. Hayes	C. F. Scholer
	R. L. Eskew	G. A. Leonards	M. B. Scott
	G. D. Gibson	C. W. Lovell	K. C. Sinha
	W. H. Goetz	R. F. Marsh	L. E. Wood
	M. J. Gutzwiller	R. D. Miles	E. J. Yoder
	G. K. Hallock	P. L. Owens	S. R. Yoder
	D. E. Hancher	G. T. Satterly	

Final Report

HISTORY OF THE INTERSTATE HIGHWAY SYSTEM IN INDIANA

Volume III (Chapter VI)

ROUTE HISTORY

by

David Alan Ripple
Graduate Instructor in Research

Joint Highway Research Project

Project No.: C-36-64H

File No.: 3-5-8

Joint Highway Research Project
Engineering Experiment Station
Purdue University

In Cooperation With

Indiana State Highway Commission

The contents of this Report reflect the views of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Indiana State Highway Commission or of the Joint Highway Research Project of Purdue University.

Purdue University
West Lafayette, Indiana
December, 1975

This dissertation is dedicated to those who conceived
an interregional system of superhighways and to those who
brought this concept into reality.

ACKNOWLEDGEMENTS

With a deep sense of gratitude, the author wishes to personally thank Dr. William L. Grecco, Head of the Department of Civil Engineering at the University of Tennessee, for his counsel in developing the work program for this study and in implementing the first critical phases of the study. He has kindled my continued interest in urban and transportation planning and our association was an unforgettable intellectual experience.

The ultimate task of reviewing this report fell to Professor Harold L. Michael, Head of the Urban and Transportation Engineering Department at Purdue University, who succeeded Dr. Grecco as major professor. During the compiling of the report, his guidance and constructive criticism were invaluable.

The participation of Dr. Gilbert T. Satterly, Jr., of the Urban and Transportation Engineering Department, Dr. Harvey H. Marshall, Jr., of the Department of Sociology, and Dr. David H. Root of the Department of Statistics in the review and critique of this research was most welcome.

The open cooperation of the Indiana State Highway Commission personnel in providing access to their files, in compiling data for portions of the report and in supplying information in extensive interviews was responsible to a large degree for the success of the research. The cooperation of the Indiana Division Office of the Federal Highway Administration and many other transportation related agencies throughout Indiana in providing additional information was invaluable.

The author also owes a debt of gratitude to the secretaries of the Joint Highway Research Project office who typed this report, the draft persons who constructed the illustrations, and his fellow students who offered encouragement and support for this research.

Not least, I acknowledge the unrepayable debt to Melinda, my wife, for reviewing the rough drafts of this report as well as providing continual moral support.

TABLE OF CONTENTS

	Page
LIST OF TABLES	xvi
LIST OF FIGURES	xix
ABSTRACT	xxvii
CHAPTER I - INTRODUCTION	1
CHAPTER II - THE NEED FOR AN INTERSTATE HIGHWAY SYSTEM AND INTERSTATE SYSTEM GOALS	7
The Traditional Role of Transportation	7
Early Governmental Involvement in Transportation.	9
Governmental Involvement in Highway Transportation on a Continuous Basis.	12
The Need Arises.	13
Goals.	14
Notes.	17
CHAPTER III - DEVELOPING A PROGRAM.	18
Toll Roads and Free Roads.	19
The Future of Indiana Roads.	23
Highway Needs for National Defense	24
Planning the Interregional Highway System.	25
Interregional Highways	27
Background for Study.	29
The Recommended Interregional Highway System	31
Selection of Routes for the Inter- regional System.	35
Route Selection in Urban Areas.	40
Access Limitation	41
Acquisition of Rights-of-Way.	42
Design of the Interregional System.	43
Constructing the Interregional System	44
Financing the Interregional System.	45
Conclusion.	50

TABLE OF CONTENTS (Continued)

	Page
The First Completion Cost Estimate	51
Status of Interstate Improvement	53
Correcting the Deficiencies	56
Retrospect	58
More Studies	59
The National Highway Study	59
DuPont's Informal Advisory Committee	60
Needs of the Highways from 1955 to 1984	61
Highway Inadequacy	62
Highway Improvement Estimate	64
Construction Needs for the First Ten Years	65
Construction Needs for the Next Twenty Years	68
Construction Expenditure	69
Maintenance and Administrative Needs and Expenditures	71
Total Needs and Expenditures	72
Highway Improvement Financing	72
Conclusion	75
The National Highway Program Study	76
Program Recommendations	78
Inadequacy of the Present Highway Network . .	80
Cost of Modernization	81
Financing the National Highway Program	84
Implementation of the National Highway Program	90
Report Conclusion	91
Notes	92
 CHAPTER IV - THE PROGRAM AND ITS EVOLUTION	 94
Construction Time	95
Manpower	97
Material and Equipment	98
Financing in General	98
Federal Highway Trust Fund	98
Highway Acts	100
Apportionment of Funds	101
Federal Share	104
Use of Funds	104
Interstate Use Restrictions	105
Administrative Policy	106
Right-of-Way Acquisition	107
Inclusion of Toll Roads in the Interstate System	108

TABLE OF CONTENTS (Continued)

	Page
Reimbursement for Completed Interstate Sections.	109
Other Provisions.	110
Indiana Motor Vehicle Fund :	111
Notes	113
CHAPTER V - EVOLUTION OF POLICIES AND STANDARDS.	114
Planning.	116
Criteria for Corridor Selection and Mileage Designation	116
Route Location Procedure	122
Location Criteria	122
Indiana's Route Location Process.	127
Evolution of the Route Alternative Evaluation Process.	132
Criteria Used to Evaluate Alternatives. .	132
Evaluation of Economic Analysis Techniques	134
Evolution of the Decision-Making Process . .	138
Overview of the Decision Making Process.	138
The Decision-Making Process in Indiana. .	140
Evolution of the Review Process.	141
Public Participation and the Public Hearing Process.	144
Notice Offering Public Hearing . . .	147
Notice of Public Hearing	149
Conduct of Hearing	151
Action on Transcript	154
Notice of Request for Approval . . .	155
Notice of Project Approval	156
Other Changes in the Review Process . .	157
A-95 Review - Project Notification and Review System.	161
Design.	167
Evolution of Design Standards.	167
Influence of Forerunners on Interstate Design.	174
Interstate Design Standards	176
Change in the Design Year	177
Minimum Four-Lane Requirement	178
Evolution of Pavement Design.	179
Safety in Design.	183
Safety Provisions for Roadside Features and Appertenances. . .	184

TABLE OF CONTENTS (Continued)

	Page
Evolution of the Interstate System Cross Section.	188
Evolution of Bridge Design	196
Traffic Control and Protection Devices	210
Considerations in Grade Treatment	211
Evaluation of Design Alternatives	213
Evolution of the Interchange	214
Interchange Location and Spacing.	215
External Factors	216
Internal Factors	219
Special Considerations	220
Interchange Justification.	224
Selection of Interchange Type	227
Interchange Design and Special Considerations	236
Other Design Features.	238
Evolution of the Separation	238
Evolution of Road Closure	241
Evolution of the Frontage Road.	242
Utilization of Collector-Distributor Roads.	243
Federal and State Policy As It Affects Design.	244
Policies on Grade Separated Crossroads Without Ramps.	244
Policies on Interchanges.	255
Policies on Other Roads	257
Policies on Additional Through Lane . .	260
Policies on Safety Improvements	262
Policy on Abandonment and Revision of Plans	266
Federal Aid Financing on Completed Sections of the Interstate System. .	268
Flexibility in Design	269
The Role of Traffic Engineering in Interstate Design.	270
Other Functional Areas.	272
New Concepts	272
Joint Development	273
Multiple Use Development.	275
Environmental Emphasis.	277
The Environmental Impact Statement and the 4(f) Statement Processes	283
Content of Environmental Impact Statement	288

TABLE OF CONTENTS (Continued)

	Page
The Environmental Impact Statement Process in Indiana	293
Roadside Development	294
Evolution of Landscape Design	294
Landscaping and Scenic Enhancement.	296
Safety Rest Parks	299
Scenic Overlooks.	302
Scenic Strips	302
Control of Outdoor Advertising.	303
Control of Junkyards.	307
Land Acquisition	308
Evolution of the Land Acquisition Process.	309
The Practice of Land Acquisition.	312
Access Control.	315
Advance Land Acquisition.	316
Overview of Advanced Land Acquisition	317
Alternatives to Advanced Land Acquisition	320
Excess Condemnation	323
Relocation	325
General Relocation Policies and Procedures	326
Evolution of Relocation Process	333
Compensation for Losses	334
Losses Due to Direct Displacement.	335
Losses Due to Uncertainty or Delay	340
Indirect Losses in Surrounding Areas	341
Cooperation with Other Agencies	342
Utilities Relocation	342
Utility Relocation Procedures	343
Utility Accommodation Policies.	345
Specifications, Contracts and Bidding.	347
Specifications.	349
Contract Proposal	350
Notice to Contractors.	350
Special Provisions	350
Federal Provisions	351
Proposal	352
Bid Schedule	353
Bid Guarantee.	353
Contract	354
Bond	354

TABLE OF CONTENTS (Continued)

	Page
Bidding	354
Construction	355
Construction Policies and Procedures.	355
Evolution of Construction Technology.	357
Maintenance.	358
Interstate System Construction Priorities	360
Notes	362
 CHAPTER VI - ROUTE HISTORY	 371
Prelude	372
Early Highway Acts	372
Designation of Interstate Mileage.	375
A Time of Study and Little Construction.	379
The Interstate Program	382
Formulation of the Indiana Interstate System.	384
Indianapolis Metropolitan Area Interstates.	385
Background of the Indianapolis Interstates	387
Interstate Route 465	390
East Leg.	392
Relocation from Shadeland Avenue.	392
Comparison of the Revised Route with a Route Farther East	394
Woolen's Gardens	396
Fall Creek Road and Fall Creek Parkway	399
Interchange of Interstate 465 and Interstate 70	400
North Leg	401
Lochner Location Study	402
Continued Opposition	408
Design Changes	411
West Leg.	413
South Leg	414
Interchanges	416
Lake Shore Golf Course	417
Interstate Routes Inside Interstate 465.	417
Location Studies.	418
Inner Belt	418
West Route	422
South Route.	427
East Route	432
Northwest Route.	433
Additions and Alternatives to the Recommended Inner City Inter- state Freeway System	436
North Freeway.	440
Northeast Freeway.	440
Modified Plan.	446

TABLE OF CONTENTS (Continued)

	Page
Interstate Type West Leg for the Inner Belt.	449
Supplemental Freeways.	452
Design of the Inner City Interstate	
Freeway System.	459
Depressed Versus Elevated.	459
Inner Belt Design.	461
North Leg Inner Belt Design. . .	463
Northeast Inner Belt Master Interchange	467
East Leg Inner Belt Design . . .	468
Southeast Inner Belt Master Interchange	471
South Leg Inner Belt Design. . .	472
West Leg Inner Belt Design . . .	473
West Route Design.	473
South Route Design	475
East Route Design.	476
Northwest Route Design	478
Public Interest	479
Public Hearings.	479
Continued Opposition	485
Indianapolis Metropolitan Area Interstates	
Outside Interstate 465.	488
Southport Road Controversy	488
Separation of 82nd and 86th Streets on Interstate 65 North	494
86th Street Separation on Interstate 69	496
Bridgeport Road Separation on Interstate 70 West	496
Interstate 70 East in Marion County .	497
Interstate 74 Interchange at Clermont	498
Interstate Route 64	500
Shifting Corridors	502
Original Location Proponents. . .	503
Southern Route Proponents . . .	504
Comparison of Route Alternatives. .	505
Population Density	505
Population and Economic Growth .	507
Service to Evansville and Crane Naval Depot	507
User Benefits.	508
Construction Cost.	509
Resolution of Events.	509
Southern Route Location Studies . . .	511

TABLE OF CONTENTS (Continued)

	Page
Lynville Location Study.	512
Alternative Location Study from SR 57 to SR 45	512
Alternatives in the SR 61 Inter- change Area.	516
Alternatives near Warrick County Road 600 West.	518
Location Alternatives Between State Road 145 and State Road 64	518
Location of Interstate 64 in New Albany.	521
Early Location Studies.	521
Reevaluation of the New Albany Location	525
Additional Interchanges.	528
Interstate Route 65	529
Jeffersonville	530
Interstate 65 Location Studies from Jeffersonville to Indianapolis.	533
Alternatives from Jeffersonville to Seymour.	533
Alternatives from Seymour to Indianapolis	534
Interstate 65 South: Special Requests . .	542
Market Street Exit Ramps.	542
Memphis Interchange	547
Underwood Interchange	548
Jackson County.	549
State Road 44 Interchange	551
Interchange 65 Location Studies from Indianapolis to Gary.	553
Swanington to Gary Location Study .	553
Lafayette	554
Wildcat Creek Reservoir	566
Interstate 65 North: Special Requests . .	571
Directional Sign to Whitestown. . .	571
Tippecanoe County	572
Clinton County.	574
Jasper County	574
Indian Gardens.	575
Crownpoint Interchange.	578
Additional Service in Gary.	579
Interstate Route 69	582
Shift of Corridor: West of Anderson to East of Anderson.	582
Shift of Interstate 69 from a Junction with Interstate 70 to a Junction with Interstate 465	588

TABLE OF CONTENTS (Continued)

	Page
Huntington and the Huntington Reservoir	594
Fort Wayne Relocation	598
Extension of Interstate 69	599
Special Cases Involving Access Treatment	607
Allen County.	607
DeKalb County	612
Delaware County	615
Grant County.	615
Hamilton County	616
Huntington County	618
Steuben County.	619
Interstate Route 70	621
Interstate 70 East	621
Richmond Bypass	621
Location of Interstate 70 in Central Indiana.	623
Special Cases and Route Service	627
Henry County	629
Wayne County	630
Interstate 70 West	632
Terre Haute Bypass.	632
Strip Mining Conflicts.	636
Interstate 70 in Central Indiana.	639
Special Cases and Route Service	639
Clay County.	639
Putnam County.	641
Vigo County.	644
Interstate Route 74	648
Interstate 74 East	648
Location Studies.	648
Special Cases	649
Dearborn County.	650
Decatur County	650
Shelby County.	651
Interstate 74 West	652
Location Studies.	652
Special Cases	658
Hendricks County	658
Fountain County.	659
Montgomery County.	662
Vermillion County.	664
Tri-State Highway	664
Lake County.	667
Grand Boulevard Separation.	667
Central Avenue Interchange.	671
SR 51 Interchange	671
Commitments by Gary	672

TABLE OF CONTENTS (Continued)

	Page
Porter County	673
Bethlehem Steel	673
Alternate Location South of Indiana	
Toll Road.	676
Samuelson Road Separation	676
Separation Requests	681
SR 149 Interchange Request.	684
Chesterton.	684
LaPorte County	687
Wagner Road Interchange	687
Grade Separation Requests	689
Additional Traffic Lanes	691
Indiana East-West Toll Road	693
Historical Background.	693
Location Studies	694
Status	697
Interstate Route 265.	697
Location Studies	698
Route Service.	701
SR 111 Interchange.	701
Extension of Interstate 265	702
Louisville Transportation Study	703
Interstate Route 275.	703
Location Studies	704
Route Service.	712
Interstate System Additions in 1968	712
Request for Additions.	714
Northeast Freeway in Indianapolis	715
Interstate 63	716
Interstate 294 Extension.	718
Interstate 164.	720
Interstate 465 West Leg Extension	724
Notes	725
CHAPTER VII - PROGRAM REVIEW	732
Inter-Governmental Cooperation.	732
Construction Progress	735
Early Years.	735
Urban Bypasses and Critical Gaps	738
System Extension	742
Completing the System.	748
Costs	754
Interstate Cost Estimate Studies	754
1958 Cost Estimate.	757
1961 Cost Estimate.	757
1965 Cost Estimate.	761
1968 Cost Estimate.	762
1970 Cost Estimate.	762
1972 Cost Estimate.	764
Additional Cost Estimate.	764

TABLE OF CONTENTS (Continued)

	Page
Evolution of Costs	765
Analysis of Increase from 1949 to 1955	765
Analysis of Increase from 1955 to 1958	768
Cost Analysis from 1958 to 1961 . . .	769
Analysis of Increase from 1961 to 1965	770
Analysis of Increase from 1965 to 1968	773
Analysis of Increase from 1968 to 1970	776
Analysis of Increase from 1970 to 1972	778
Future Increases in the Total Cost of the System.	781
Actual Costs	782
Funding	786
Authorizations and Apportionments.	786
Federal Highway Act of 1958	788
Federal Highway Act of 1959	788
Federal Highway Act of 1961	791
Federal Highway Act of 1965	792
Federal Highway Act of 1966	792
Federal Highway Act of 1968	792
Federal Highway Act of 1970	793
Future Legislation.	793
Utilization of Funds	794
Interstate Work Load.	807
Notes	812
CHAPTER VIII - GENERAL BENEFITS.	814
Benefits.	814
User Benefits.	815
Community Benefits	816
Effect on Other Highway Programs.	825
The Second Time Around.	826
Notes	830
BIBLIOGRAPHY	831
General References.	831
Location Studies and Reports.	843
APPENDIX	851

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Estimated Urban, Rural, and Total Mileage, Total Rural Vehicle Mileage and Average Daily Traffic on Rural Sections Studied, Including the Recommended System	37
2	Classification of Public Highway Expenditures	48
3	Inventory of Interstate Mileage Type of Pavement and Class of Area	55
4	Inventory of Interstate Mileage, Surface Width by Class of Area and Type of Facility	55
5	1955-64 National Construction Needs.	66
6	1955-64 Indiana Construction Needs	66
7	Proposed 10-Year National Highway Program Financing.	85
8	Financial Plan for Highway Program	89
9	Interstate Cross Section Characteristics. .	191
10	Interchange and Separation Spacing	223
11	Interchange Classification	234
12	Interstate 275: Cost Comparison of Alternatives	708
13	Interstate Mileage Designated.	758
14	Funds Required to Complete Interstate System	759

LIST OF TABLES (Continued)

<u>Table</u>		<u>Page</u>
15	Estimate of Cost of Completing the Interstate System in Indiana by Route.	760
16	Estimated Total Cost of the Interstate System for Nation.	766
17	Estimated Total Cost of the Interstate System in Indiana.	767
18	Cost Analysis of Increase of Interstate Cost for Nation.	771
19	1965 Interstate Cost Estimate: Cost Analysis of Increase in Cost Over 1961 Estimate	772
20	1968 Interstate Cost Estimate: Cost Analysis of Increase in Cost Over 1965 Estimate	774
21	1970 Interstate Cost Estimate: Cost Analysis of Increase in Cost Over 1968 Estimate	777
22	1972 Interstate Cost Estimate: Cost Analysis of Increase in Cost Over 1970 Estimate	780
23	Expenditures in Indiana.	784
24	Costs of Indiana Interstate Routes	785
25	Interstate Authorizations.	787
26	Status of Financing Federal Share of Cost to Complete the Interstate System.	789
27	Federal Aid Highway Apportionments for Nation	795
28	Interstate Funds Apportioned to the Nation .	796
29	Interstate Funds Apportion to the State of Indiana by Law.	799
30	Federal Highway Program Financing in Indiana.	801

LIST OF TABLES (Continued)

Table		Page
31	Status of Interstate Funds in Indiana.	804
32	Estimate of Funds Required to Complete the Interstate System Based on the 1972 Interstate Cost Estimate	805
33	Estimate of Funds Required to Complete the Interstate System Based on the 1974 Interstate Cost Estimate	805
34	Total Contracts Let and Awarded.	810
35	Average Number of Employees in the Indiana State Highway Commission	811
36	Relocation Statistics for Interstate	820
37	Analysis of Relocation Assistance and Payments for Interstate System in Indiana from October 1, 1965 to September 30, 1968	821
38	Analysis of Relocation Assistance for Interstate System in Indiana From October 1, 1968 to June 30, 1973	822
39	Analysis of Relocation Payments for Interstate System in Indiana From October 1, 1968 to June 30, 1973	822
40	Status of Improvement of Interstate Highways in Indiana.	851
41	Mileage Open to Traffic.	874
42	Summary of Interstate Route Mileage.	892

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Major Highways in Indiana Prior to 1850. . . .	11
2	The Transcontinental Toll Road System. . . .	21
3	Location of Existing Routes Selected as Approximating the Lines of a Proposed Interregional Highway System	22
4	The 29,300-Mile System Investigated by the Public Roads Administration as an Interregional System in June 1941.	26
5	The General Location of Routes of the Recommended Interregional Highway System . .	32
6	Relation of the Recommended Interregional System to the Strategic Network of May 15, 1941	34
7	Graph Employed in Refining Committee's Selection of the Interregional System. . . .	37
8	The 36,000-Mile Interregional System	39
9	Rate of Expenditure Based on National Construction Needs from 1954 to 1984	70
10	Rate of Expenditure Based on National Construction, Maintenance and Administration Needs from 1954 to 1984.	73
11	Rate of Expenditure Based on Interstate Construction, Maintenance and Administrative Needs from 1954 to 1984	74
12	National System of Interstate Highways: Rural Status of Improvement by 1965.	83

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
13	Project Notification and Review System	163
14	Design Process.	169
15	Federal Participation in Cost of Eliminating Pavement Deficiencies	182
16	Typical Interstate Cross Sections in Indiana	190
17	Horizontal Clearances - All Interstate Overcrossing Structures Except Major Long Span Structures.	199
18	Horizontal Clearances - Major Long Span Structures Interstate System Overcrossings.	200
19	Horizontal Clearances Major Span Structures in Indiana	201
20	Horizontal Clearances - Auxiliary Lanes Interstate System Overcrossings	203
21	Guardrail Placement	205
22	Guardrail-Bridgerail Transition	206
23	Roadside Clearance to Bridge Supports	209
24	Interchange Type Selection Process.	228
25	Limit of Federal Participation.	246
26	Limit of Federal Participation.	247
27	Limit of Federal Participation.	247
28	Limit of Federal Participation.	248
29	Limit of Federal Participation.	248
30	Limit of Federal Participation.	249
31	Limit of Federal Participation.	249
32	Limit of Federal Participation for Cross- road Recalculation	251

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
33	Limit of Federal Participation for Crossroad Relocation.	251
34	Limit of Federal Participation.	252
35	Limit of Federal Participation from Interchange Ramps	256
36	Federal Participation in Frontage Roads . .	258
37	Federal Participation in Frontage Roads . .	259
38	Environmental Impact Statement Process at the Location Stage.	287
39	Environmental Impact Statement Process at the Design Stage.	289
40	Safety Rest Parks	300
41	National System of Interstate Highways Designated on August 2, 1947.	380
42	Proposed Interstate Routes in the Indianapolis Metropolitan Area in September of 1955	386
43	Interstate 465 - East Leg: Relocation from Shadeland Avenue	395
44	Interstate 465 - East Leg: Comparison of Revised Location with Warren Civic Association Location.	397
45	Woolen's Gardens Area	398
46	Interstate 465 - North Leg: Location Alternatives.	404
47	Interstate 465 - South Leg: Relocation of Southwest Corner	415
48	General Corridors for Interstate Routes Inside Interstate 465	419
49	Interstate 70 - West Route: Original Location.	423

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
50	Alternative Locations for Interstate Routes Inside Interstate 465.	425
51	Interstate 70 - West Route: Revised Location and Alternatives	426
52	Interstate 65 - South Route: Revised and State Avenue Locations.	430
53	Interstate 65 - South Route: Relocation and Alternatives.	431
54	Interstate 70 - East Route: Recommended Location.	434
55	Indianapolis Interstate Highway System Plan of 1957.	437
56	Indianapolis Interstate Highway System Plan of 1957 - Anticipated 1975 Traffic Volumes	438
57	Final Location of the Indianapolis Interstate Freeways	439
58	Central Business District Thoroughfare Plan of 1963.	441
59	Official Thoroughfare Plan for Marion County in 1962.	442
60	Recommended Central Business District Thoroughfare Plan in 1969	443
61	Recommended Thoroughfare Plan for 1985. . .	444
62	Proposed North Freeway and Northeast Freeway	445
63	The Proposals fo Livable Indianapolis for Everyone and the Indianapolis Tax-payers Association.	448
64	Interstate Type West Leg for the Inner Belt Along the Proposed Harding Expressway.	451

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
65	Interstate Type West Leg for the Inner Belt Through the University Complex	453
66	Supplemental Freeways for Central City: Alternative 1 - Route Through University Complex.	454
67	Supplemental Freeways for Central City: Alternative 2 - Modified Plan	455
68	Supplemental Freeways for Central City: Alternative 3 - Proposed SR 37.	456
69	Supplemental Freeways for Central City: Alternative 4 - Proposed Interstate Freeway System.	457
70	Indianapolis Inner Belt Design in 1970. .	464
71	Interstate 70 - West Route: Alternative Locations Through Stout Field	483
72	Interstate 65: Proposed Interchange Locations South of I-465 in Marion County.	489
73	Interstate 64: Economic Comparison of Route Alternatives	506
74	Interstate 64: Alternative Locations in the Lynnville Area	513
75	Interstate 64: Alternatives in the SR 61 Interchange Area and Near Warrick County Road 600 West	517
76	Interstate 64 - Harrison County Planning Commission Alternative Location	520
77	Interstate 64: The Three General Corridors for the Ohio River Crossing . .	522
78	Interstates 64 and 65: Alternative Ohio River Crossings.	526

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
79	Interstate 65: Alternatives from Seymour to Indianapolis	535
80	Interstate 65: Jeffersonville.	544
81	Proposed Market Street Ramp	545
82	Interstate 65: Jackson County.	550
83	Franklin Thoroughfare Plan.	552
84	Interstate 65: Swanington to Gary. . . .	555
85	Interstate 65: From Lebanon to Fair Oaks.	558
86	Interstate 65: Location Alternatives and Proposed Future Land Use of Lafayette . .	560
87	Proposed Traffic Plan for Metropolitan Lafayette in 1961	561
88	Interstate 65: Alternative Locations in White and Jasper Counties.	564
89	Interstate 65: Alternative Locations in the Proposed Wildcat Reservoir Area. .	567
90	Interstate 65: Alternate Route Through Indian Gardens.	576
91	Interstate 65: Proposed Spur to U.S. 12-20.	581
92	Interstate 69: Location East of Anderson.	584
93	Interstate 69: Alternative Locations from Pendleton to Fort Wayne.	585
94	Interstate 69: Alternative Locations from Indianapolis to Pendleton.	590
95	Interstate 69: Alternatives in the Huntington Reservoir Area	597

LIST OF FIGURES (COntinued)

<u>Figure</u>		<u>Page</u>
96	Interstate 69: Allen County.	600
97	Interstate 69: Alternatives from Waterloo to the Indiana-Michigan State Line.	603
98	Interstate 69: Alternatives in the Lake Charles Area	606
99	Interstate 69: Relocation at the Indiana-Michigan State Line	608
100	Interstate 69: Fishers Area.	617
101	Interstate 70: Alternative Locations from Indianapolis to S.R. 1	625
102	Interstate 70: Additional Construction Costs as a Result of Alternate B.	628
103	Interstate 70: Alternative Locations for Terre Haute Bypass.	634
104	Interstate 70: Initial Relocation in Strip Mining Area	637
105	Interstate 74: Alternatives from Covington to Indianapolis	653
106	Tri-State: Location Alternatives	674
107	Interstate 94: Access Alternatives to Chesterton	686
108	Alternative Indiana Toll Road Routes. . .	695
109	Interstate 265: Location Alternatives. .	699
110	Interstate 275: Alternatives	705
111	Interstate 275: Locations Selected by Consultant	707
112	Interstate 275: Final Location	711
113	Interstate 275: Relocation West of Elizabethtown	713

LIST OF FIGURES (Continued)

<u>Figure</u>		<u>Page</u>
114	Interstate 69 Extension (Northeast Indianapolis Freeway) and I-465 Connector	717
115	Interstate 64 Spur and Interstate 63: Traffic Assignments for 1990	719
116	Interstate 294 Extension.	721
117	Interstate 164.	723
118	Status of Improvement of Indiana Interstate System as of December 31, 1960.	739
119	Status of Improvement of Indiana Interstate System as of January 1, 1964.	743
120	Status of Improvement of Indiana Interstate System as of January 1, 1968 .	744
121	Status of Improvement of Indiana Interstate System as of December 31, 1971.	749
122	Status of Improvement of Indianapolis Interstates as of December 31, 1972 . . .	752
123	Status of Improvement of Indiana Interstate System as of December 31, 1972.	753
124	National Status of Improvement of Interstate System as of June 30, 1972.	755
125	Federal Aid Highway Program Financing . .	797
126	Interstate Federal Aid Financing: Apportionments, Releases, Obligations, and Collections in Indiana on a Fiscal Year Basis.	802
127	Interstate Federal Aid Financing: Apportionments, Obligations, and Collections in Indiana on a Cumulative Basis	803
128	Social and Housing Characteristics Inner Loop Freeway Plan	824

ABSTRACT

Ripple, David Alan. Ph.D., Purduc University, December, 1973.
The History of the Interstate Highway System in Indiana.
Major Professor: Harold L. Michael.

This work is a reconstruction of the planning, development and implementation of the Interstate Highway Program in Indiana as well as the Nation. The historical data for this record was gathered from Federal reports, documents, and legislation; Federal Highway Administration documents and interviews; Indiana State Highway Commission records and interviews; and other transportation related agency reports and interviews throughout Indiana.

Because of the voluminous amount of data involved, a combination of the stages of the systems analysis process and the highway planning and programming process was used in the reconstruction and presentation of the historical record.

The work begins with a description of the traditional role of transportation in the economy and the role of government in highway development. The need for an interregional super highway system and the goals and objectives of the Interstate Program are documented.

The development of the Interstate Program is traced from its conception in the late 1930's to the landmark legislation in 1956. The highway needs and programs developed by numerous studies during this period are described in detail.

The Interstate Program as set forth by the Federal Aid Highway Act of 1956 and its evolution are described in terms of policies on construction time, the utilization of manpower, the use of material and equipment, and financing. Under

financing, the report covers in great depth the apportionment of funds, federal participation, the use of funds, administrative policy, right-of-way acquisition, the inclusion of toll roads in the Interstate System and the reimbursement to States for completed Interstate sections.

All programs are subject to an evolution in policies and standards which ultimately affect the ultimate product. The research covers Interstate route location and selection, the route alternative evaluation process, the public hearing process, the A-95 Review Process (Project Notification and Review Process), the decision-making process and interagency cooperation, the environmental statement process and highway impact guidelines, policies on multiple use and joint development, the evolution of design standards with a heavy emphasis on safety in design, the evolution of interchange location and spacing, federal policies on fund participation, the evolution of landscape design including billboard and junkyard control, the evolution of the land acquisition process and the relocation process and other processes and policies.

Leaving the national scene, the work concentrates on designation of the Interstate Routes in Indiana, the formulation of the Indiana Interstate Program, and the historical development of the Indiana System. A description of studies and events leading to the development of each Interstate Route is covered in great detail.

Finally, the report assesses the relationship between revenues, expenditures, and cost completion estimates on the Interstate System. The progress of the Indiana System toward completion is documented on a fiscal year basis. A gross overview of the benefits and impacts of Interstate development on the citizens of Indiana concludes the presentation.

CHAPTER VI

ROUTE HISTORY

The history of each Interstate Route in Indiana has been developed from interviews with personnel of the Indiana State Highway Commission, the Indiana Division Office of the Federal Highway Administration, the Indianapolis Department of Transportation, the Indianapolis Department of Metropolitan Development, and other agencies involved in the development or implementation of the Indiana Interstate Program; from an extensive review of route location studies developed by the Indiana State Highway Commission and Consultants; and from an extensive review of correspondence between the Indiana State Highway Commission and other agencies and the general public. The route history concentrates on the development of each route and the special efforts to improve public service.

The general development of the Interstate Program at the national level was described in earlier chapters of this report. The general foundation for the route histories was also established in the previous two chapters titled, "The Program and Its Evolution" and "The Evolution of Policies and Standards", which covered general policies and procedures, location and design criteria, evaluation and decision-making processes, and other processes that affected the Interstate Program.

In interpreting the events that led to the development of the Interstate Routes, one must recognize the policies, procedures and regulations that were applicable at a particular time. This route history merely relates events that occurred in the development of the routes. This record is not intended as a critique of decisions made in the past

nor an attempt to evaluate decisions of the past in the context of the present.

Prelude

The present Indiana Interstate Program evolved from eighteen years of development at the national level. In the 1930's, it had become evident that the conventional primary highways were no longer adequate to serve travel between major metropolitan routes. Since the existing interurban highways performed the dual function of serving through traffic and providing property access, they were unable to move high volumes of through traffic at high speeds. Consequently, the desire for a national system of highways that would serve only through traffic came to life.

Early Highway Acts

In 1938, Congress responded to proposals for a national system of superhighways by requesting the Bureau of Public Roads to study the feasibility of financing a national toll road system of three north-south and three east-west superhighways. The Indiana State Highway Department, along with other State highway departments, provided basic data for the study Toll Roads and Free Roads which was presented to Congress in 1939. The 13,000 mile national toll road system proved to be financially infeasible. However, the study documented the need for a system of inter-regional highways to connect the major metropolitan areas and proposed a 26,700-mile system with the Federal government bearing more than fifty percent of the construction cost.

The Second World War soon erupted in Europe, and President Roosevelt requested the Bureau of Public Roads to evaluate the adequacy of the Strategic Highway System and

the necessity of defense access roads for national defense. The State highway departments again supplied information on highway characteristics to be utilized in a national study. The report Highways for the National Defense was presented to Congress in 1941 and documented many deficiencies in the Strategic Highway Network. Since the Strategic Highway Network included the highways of the proposed interregional highway system, the interregional highway system had the same deficiencies. This report spurred President Roosevelt into appointing the National Interregional Highway Committee to investigate the feasibility of a national expressway system.

In the Federal Aid Highway Act of 1943, Congress requested the Public Roads Administration to report on the need for an interregional highway system. The Public Roads Administration and National Interregional Highway Committee published the joint report Interregional Highways in 1944. The study established criteria for locating the interregional routes and determined the optimum length of the interregional system on the basis of the overall length that would result in the highest average daily traffic volume. The study proposed a 39,000-mile system with full access control and high geometric design standards; the mileage included 5,000 miles of auxiliary urban routes to collect and distribute the interregional traffic.

The National Interregional Highway Committee failed to make an overall cost estimate for the interregional system, but suggested that \$750 million a year should be spent to upgrade the system. The expenditure of \$750 million per year was to result in improvement of the system at a rate slightly above the rate at which existing sections of the system became obsolete.

President Roosevelt and the National Interregional Highway Committee had urged construction of the interregional system to stabilize the national economy after the Second World War. The construction of the interregional system was intended to utilize the surplus labor released from wartime production. The Indiana State Highway Department supported legislation for the interregional highway system through the American Association of State Highway Officials. To develop the design and location criteria for the interregional system and to support legislation, the State highway departments were requested by the American Association of State Highway Officials and the Public Roads Administration to provide information on traffic counts, mileage data and facility characteristics. The American Association of State Highway Officials utilized the information in support of interregional highway system legislation at Congressional hearings on the subject.

In the Federal Aid Highway Act of 1944, Congress designated a 40,000-mile National System of Interstate Highways "to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico."¹ However, Congress failed to authorize funding specifically for the construction of the Interstate System. Indiana highway officials were disappointed with this failure for they had hoped the Federal government would bear a greater share of the cost of the Interstate System than the normal fifty percent.

Designation of Interstate Mileage

Indiana received more Interstate mileage on the basis of population, area and highway mileage than most other States. Because traffic is funneled around the Great Lakes, Indiana has a disappportionate share of the east-west Interstate Routes. The number of north-south routes crossing Indiana, on the other hand, is comparable to other States.

Since Indianapolis is located at the focal point where many primary highways cross, Indianapolis has more radiating Interstate Routes than any other city in the United States. Chicago, excluding Interstate 80 which is tangent to the metropolitan area, and Atlanta have six radiating Interstate legs each, one less than Indianapolis.

Before the mileage within the 40,000-mile limitation was officially designated on August 2, 1947, most of the state highway departments reviewed the initial selections and in many cases suggested additional mileage for inclusion in the Interstate System. The Indiana State Highway Department proposed several additional Interstate routes, including a route from Indianapolis to Cincinnati; a route from Evansville to the Calumet Area paralleling US 41; a route from Indianapolis to Benton Harbor, Michigan, via South Bend; and a route from Indianapolis to Evansville.

Interstate 74 as initially designated was intended to serve primarily five major cities in Illinois and extended from Davenport, Iowa, to Indianapolis (the logical metropolitan area termini for the route) to assure system continuity. If the route were extended from Indianapolis to Cincinnati, the route would link a third major metropolitan area making Interstate 74 more viable and more interstate in character. The extension of Interstate 74 from Indianapolis to Cincinnati would also provide Cincinnati with a connection to the northwest United States and Indianapolis with a connection, to a lesser degree, with southeast

United States. This proposal proved to be the only major addition to the Interstate System in Indiana as officially designated in 1947.

Because of the poor alignment of US 41, the economic deterioration of southwestern Indiana, and the fact that Evansville was one of the few cities of over 100,000 persons that was not served by the Interstate System, the Indiana State Highway Department pressed for an Interstate route from the Calumet Area to Evansville paralleling US 41. The proposed route would have linked with Interstate 64 near Vincennes and was a logical extension of Interstate 24 if it terminated at Evansville. However, Kentucky at that time was reluctant to participate in the Interstate program because funding was still at the fifty-fifty level. Consequently, Kentucky wished to hold its Interstate mileage to a minimum and did not press for the extension of Interstate 24 northward from Nashville.

As Interstate 24 was not extended from Nashville to Evansville, the proposed Interstate route in Indiana parallel to US 41 lacked continuity and was not of interstate character. Furthermore, US 41 was paralleled by Interstate 57 in Illinois and Interstate 65 in Indiana and the spacing of north-south Interstate routes made the justification of a route between these two routes very difficult. Indiana was unsuccessful in getting approval for an Interstate route parallel to US 41 in 1947. It made another attempt in 1968 that also failed. When the extension of Interstate 24 from Nashville into Kentucky was reconsidered after 1956, Indiana suggested Evansville and Interstate 64 as the logical terminus; however, Kentucky preferred that Interstate 24 serve Paducah and link with Interstate 57 into Chicago.

Because US 31 was one of the first routes in the Indiana highway system and because there was a void between Interstate 65 and Interstate 69, Indiana suggested an Interstate route from Indianapolis to Interstate 94 near Benton Harbor, Michigan, via South Bend. Interstate 65 paralleled US 31 from Mobile to Indianapolis and would have continued to Interstate 94 if it had followed traditional US 31. Nevertheless, the size of the Chicago Metropolitan Area pulled Interstate 65 away from US 31. As Benton Harbor was not a major metropolitan area and was already served by the Interstate System, the proposed Interstate route failed to satisfy some of the location criteria. In addition, US 31 was felt by some to be more intrastate in character from Indianapolis to South Bend, and the parallel US 31 route was not added to the Interstate System.

As noted earlier, Evansville was one of the few cities of over 100,000 persons not served by the Interstate System. To correct this condition, Indiana proposed inclusion of Evansville by the extension of Interstate 69 from Indianapolis to Evansville to link with Interstate 24. Due to the fact that Interstate 24 terminated at Nashville and Interstate 64 went through Vincennes instead of Evansville, the extension of Interstate 69 lacked system continuity. Furthermore, the corridor lacked sufficient traffic generation and was primarily intrastate in character. The proposed addition proved unsuccessful.

The Public Roads Administration established the routes for tentative integration into the National System of Interstate Highways on March 14, 1946. The Indiana State Highway Commission approved the incorporation of the designated routes in Indiana into the Interstate System on March 29, 1946, and suggested the additional routes just discussed. When the Public Roads Administration officially designated the routes to be integrated into the Interstate System on

August 2, 1947 as shown in Figure 41 (p. 380), Indiana received one additional route - the extension of Interstate 74 from Indianapolis to Cincinnati.

Approximately 37,700 miles of the Interstate System were designated in 1947. The remaining mileage of 2,300 miles was reserved for urban circumferential and distribution routes. The designated 37,700 miles of Interstate System in 1947 were on highway routes as they existed at that time.

A Time of Study and Little Construction

In the Federal Aid Highway Act of 1948, Congress directed the Bureau of Public Roads to study the status of improvement of the Interstate System and to update the report of February 1, 1941 entitled Highways for the National Defense. The report Highway Needs of the National Defense was presented to Congress on April 1, 1949. The study revealed that \$11,266 million was needed to correct critical deficiencies of the Interstate System and recommended that \$500 million be spent annually to overcome these deficiencies. The cost estimate did not include 2,200 miles of urban auxiliary routes yet to be designated within the 40,000-mile limitation and was based on correcting the known critical deficiencies in existing highway routes to tolerable standards rather than construction to controlled access standards. At that time, it was expected that the Interstate System could be developed by upgrading existing highways through reconstruction and widening.

National progress in developing the Interstate System was slow because no funds were specifically earmarked for the Interstate System. The Federal Aid Highway Act of 1952 authorized a mere \$25 million for Interstate construction for each of the fiscal years 1954 and 1955 at the traditional matching fund basis. The Federal Aid Highway Act of 1954



FIGURE 41. NATIONAL SYSTEM OF INTERSTATE HIGHWAYS DESIGNATED ON
AUGUST 2, 1947²

authorized \$175 million for the System for each of the fiscal years 1956 and 1957 with the Federal government bearing sixty percent of the construction cost.

Like other States, Indiana did not place special emphasis on developing the Interstate System in its early years. In 1949, the Indiana State Highway Department began construction on the Tri-State Highway as a portion of the Interstate System. Prior to 1954, the Indiana State Highway Department had built a few dual lane highways which were a part of the designated Interstate System. These included US 40, US 41 and US 52 from Hammond to Lebanon, US 31 in Jeffersonville and from Indianapolis to Columbus, US 24 and SR 37 from Huntington to Fort Wayne, and SR 100 east of Indianapolis.

Intensive study of the national highway program began with Congressional hearings in 1953. In the Federal Aid Highway Act of 1954, Congress requested the Bureau of Public Roads to report on the cost of modernizing the Nation's highway system. That same year President Eisenhower appointed an Advisory Committee on a National Highway Program. The Bureau of Public Roads report Needs of the Highway Systems, 1955-84 supplied the cost information for the report of the Advisory Committee on a National Highway Program, A 10-Year National Highway Program.

In February of 1955, the Advisory Committee reported that the overall cost to complete the Interstate System over a ten-year period would be \$27 billion. The Advisory Committee recommended that the Federal government provide \$25 billion of the Interstate construction cost and that the Federal share of the Interstate cost be financed through the creation of a Federal Highway Corporation which would issue long term revenue bonds.

On September 15, 1955, the Bureau of Public Roads in cooperation with the State highway Departments and the Department of Defense designated the general locations of 2,300 miles of Interstate urban circumferential and distribution routes, the remaining mileage within the 40,000-mile limitation that had been held in reserve in 1947. Interstate 465 around Indianapolis was included in this designation.

The Interstate Program

In the first half of 1955, the Congressional Public Works Committees of the House and Senate held extensive hearings based on the Needs of the Highway Systems, 1955-84 and A 10-Year National Highway Program. The Indiana State Highway Department supported legislation through the American Association of State Highway Officials.

On February 5, 1955, Senator Gore introduced a bill that provided increased financing for the Interstate System with the Federal government bearing two-thirds of the cost with the apportionment of funds on the conventional basis (one third population, one third area, and one third mileage of rural delivery and star routes of each State as compared to all States).

The Administration Bill which included the creation of the Federal Highway Corporation was soon introduced in the Senate and was followed by the Senator Case's Bill which recommended that the Federal government provide ninety percent of the Interstate cost. In subsequent Senate actions, the Gore Bill was modified to provide \$7.75 billion for the Interstate System over a five-year period on a ninety-ten Federal-State cost sharing basis and was passed by the Senate on May 25, 1955 without revenue provisions.

In 1955 in the House of Representatives, Representative Fallon introduced a bill that provided \$24 billion for the Interstate System over a twelve-year period with the Federal government bearing ninety percent of the cost with the apportionment of funds on the basis of need. The Fallon bill proposed increases in the Federal motor fuel and rubber taxes to provide the needed revenue. Neither the Fallon Bill nor the Administration Bill passed the House. The problems of funding, apportionment, Federal participation, and providing the revenues were still to be resolved.

In 1956, the House developed a bill that provided \$25 billion for the Interstate System over a thirteen-year period with the Federal government bearing ninety percent of the cost with apportionment on the basis of need. The House bill also created the Federal Highway Trust Fund to finance the national highway program on a "pay as you go" basis. The financing of the Federal share of the Interstate cost by revenue bonds as proposed by some was vigorously opposed because of the interest costs.

After the House Bill passed on April 27, 1956, the Senate reduced the funding to \$24,825 million over a thirteen-year period, substituted an apportionment on the basis of the traditional formula, and added the Byrd Amendment which prohibited any deficit in the Federal Highway Trust Fund. The Senate approved this revised bill on May 29, 1956 and it went to a House-Senate Conference.

The compromise bill was passed by the Congress on June 26, 1956 and was signed by the President on June 29, 1956. The compromise bill provided \$24,825 million for Interstate construction over a thirteen-year period and required ten percent State matching funds; apportioned the Interstate funds for the first three years on the basis of one-half the population and one-half the conventional formula and for the remaining years on the basis of need; increased the

mileage limitation to 41,000 miles; and created the Federal Highway Trust Fund to finance the Federal share of the cost of the Interstate Program and other highway programs.

Formulation of the Indiana Interstate Program

The 1956 expanded Interstate Program hit the Indiana State Highway Department when it was at a low level of personnel and operations due to previous years of inadequate funding. Unlike some States that had already processed several design plans for Interstate routes, Indiana discovered that sufficient design plans were not far enough along to make an immediate start on the Interstate System.

To increase its productivity, the Indiana State Highway Department reorganized the design and location functions. A separate Planning Division was created from the location and planning operations of the Design Division. Several design engineers were assigned solely to Interstate plans to increase Interstate design production. When the Department found that over ninety percent of the Interstate System would have to be on new locations, it quickly realized that there were not sufficient engineers to carry out the full task of location and design. As a consequence, increased use of consultants for design was initiated in 1957 and they performed much of the engineering design for the Interstate System.

Indiana also lacked sufficient State matching funds in 1956 and this was not corrected until revenue began accumulating from the State gasoline tax increase of 1957. As the Indiana State Highway Department had to gear up all its activities to implement the expanded Interstate Program, the lack of matching funds did not create severe problems in Interstate location and design. However, the lack of matching funds did create a time lag in construction because Indiana was not able to advance projects to construction as rapidly as

other States who had sufficient matching funds or who used deficit financing.

The development of the Indiana Interstate Program was done almost entirely by the Indiana State Highway Department. An Indiana Department of Planning was virtually non-existent during the development of the System and overall Statewide planning activity provided little help. Local communities and agencies provided guidance in location of facilities and public hearings provided information on local concerns and interests.

The Indiana State Highway Department utilized general guidelines in developing the construction priorities as discussed in "The Evolution of Policies and Standards". Nevertheless, the Indiana Interstate priorities in the early years of the Interstate Program were influenced primarily by the projects being processed at the time the Interstate Program was adopted by Congress.

Indianapolis Metropolitan Area Interstates

The interregional highway system, recommended by the 1944 report Interregional Highways, included six interregional routes converging on Indianapolis. The seventh converging route, Interstate 74 from Cincinnati was designated on August 2, 1947. The National Interregional Highway Committee also recommended circumferential routes and transverse routes through the centers of larger metropolitan areas.

The Indianapolis circumferential route, Interstate 465, was designated on September 15, 1955. The extensions of Interstate 65, Interstate 69, and Interstate 70 through Indianapolis were included in the designation of August 2, 1947. Thus, all the Interstate routes in the Indianapolis Metropolitan Area, which appear in Figure 42 (p.386), were a part of the original 40,000 miles of the Interstate System as approved in September of 1955.

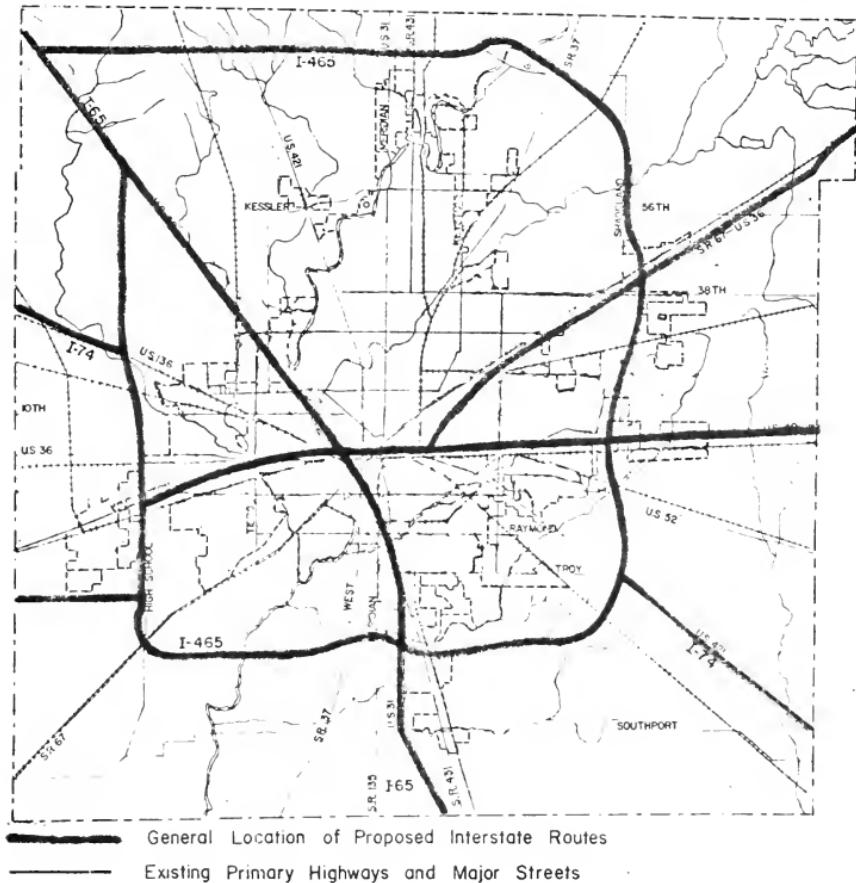


FIGURE 42. PROPOSED INTERSTATE ROUTES IN THE
INDIANAPOLIS METROPOLITAN AREA IN
SEPTEMBER OF 1955³

Background of the Indianapolis Interstates

In the early 1940's the Indiana State Highway Department recognized the need for an Indianapolis bypass to allow through traffic to circumvent the urban area and to remove through traffic from the downtown area. Construction on the SR 100 bypass was started temporarily in 1943. When construction was resumed in 1947 and 1948, the north leg of SR 100 from US 52 to new SR 37 and the east leg of SR 100 from new SR 37 to US 40 were completed. Because the bypass facility lacked complete access control, including grade separations and interchanges, the facility soon failed to serve the purpose for which it was intended. The rapid industrial and commercial development on the east leg of SR 100 reduced the facility from a bypass highway to a property access highway with bypass traffic.

Because future expansion or upgrading of the east leg of SR 100 was difficult, the Indiana State Highway Commission chose to delay construction of the balance of the bypass and waited to see if a bypass route would be included in the Interstate System. "When the Interstate became a reality (in 1956) traffic demands had increased to such a degree that the construction of an Interstate Route around Indianapolis would be only partial relief to traffic congestion in Indianapolis."⁴ The construction of Interstate Routes through Indianapolis was also needed to relieve internal traffic congestion.

Development of the Interstate System in Indianapolis and Marion County began in 1956. The following year the Indianapolis Metropolitan Planning Commission hired Barton and Associates to develop a county thoroughfare plan. To coordinate implementation efforts of the Interstate Program and the Thoroughfare Plan, the Cooperative Highway Administrative Committee for Marion County and the Cooperative Highway Working Committee for Marion County were formed in 1961.

The Administrative Committee was composed of administrative officials of the various local, State, and Federal agencies involved in spending highway funds. The Working Committee consisted of members of the technical staffs of the various agencies on the Administrative Committee and was to coordinate all phases of planning relative to highway location, design, construction and operations and to make recommendations to the Administrative Committee for review and action. The Administrative Committee approved the route location, general design and access control features of the proposed Interstate Routes in Marion County. The Administrative Committee yielded its policy making power to an advisory committee of Federal, State, county, and city officials in 1969.

The Indianapolis Interstate System consists of three basic elements: the outer belt which is located around the fringe of the urban area to serve as a bypass route for through traffic; penetrating routes which are located through the urban area to serve as distribution and collection routes for Interstate traffic with origins or destinations in the urban area and as cross-town freeways for local traffic movement between sections of the urban area; and the inner belt which is located around the fringe of the central business district to interconnect the penetrating routes and to serve as a distribution and collection system for traffic with a trip end in the core of the urban area.

Based on the Indianapolis origin and destination survey of 1945 and the cordon survey of 1956, which were used to project 1975 traffic volumes, twenty percent of the 1975 external traffic did not have destinations within the urban area (municipal boundaries) and would utilize a bypass route. The outer belt was located in predominately rural areas to minimize the cost of right-of-way and construction and at a distance far enough away from the urban area so as

not to interfere with suburban development, yet close enough to the urban areas so as to minimize adverse distance for interchanging traffic between the intersecting Interstate Routes.

As eighty percent of the external traffic had destinations within the urban area, it was essential that Interstate routes penetrate the urban area to distribute that traffic. Because thirty percent of the destinations were within the central business district and another twenty-five percent of the destinations were within a one and one-half mile band surrounding the central business district, the penetrating routes converged on the fringe of the central business district where the greatest volume of destinations would be served.

Due to the orientation of the Interstate Routes approaching the metropolitan area and the fact that the central business district is also the geographic center of the metropolitan area, the penetrating Interstate Routes form radial routes from the northwest, northeast, east, south and west converging on the inner belt. Consequently the system of radials and inner belt facilitate the movement and interchange of local traffic from different sectors of the urban area, resulting in a cross-town freeway system. To interconnect the radial routes and to discharge traffic without breaking down the circulation system in the urban area core, an inner belt was necessary.

In the process of selecting the locations for the Interstate facilities, a detailed analysis was made of travel characteristics, present and future land use, neighborhood structure, the growth and development of the urban area, and right-of-way and construction costs. The selection of a route with the highest level of user and community benefits was based on a comparison of alternatives.

The design of the facilities was based on traffic, local streets, aesthetics, drainage, and economics.⁵ The present and projected traffic volumes were the prime considerations in locating the interchanges and grade separations, in determining the number of lanes for the facilities, and in evaluating the adequacy of the local street system to handle the distribution of Interstate traffic. The final design was also selected by a comparison of alternatives.

Interstate Route 465

When a circumferential route for Indianapolis was designated as a part of the Interstate System in 1955, the general corridor for the route was the existing and projected location of SR 100. Interstate 465 was in essence the revival of the SR 100 bypass concept. The East Leg of Interstate 465 followed Shadeland Avenue (SR 100). Due to development on the north leg of SR 100 (86th Street), the North Leg of Interstate 465 followed the alignment of 91st Street. The West Leg of Interstate 465 was located on the once anticipated alignment of SR 100 adjacent to High School Road. The South Leg of Interstate 465 approximated the anticipated alignment of SR 100 just north of Thompson Road.

Alternate corridors for Interstate 465 were proposed by the Indianapolis Metropolitan Planning Department at early conferences with the Indiana State Highway Department and at early public hearings on the route location. At one conference, Lawrence Sheridan proposed a circumferential route around Indianapolis to link its satellite cities. The belt route was to be located twenty to twenty-five miles from the center of Indianapolis and would connect Lebanon, Noblesville, Fortville, Greenfield, Franklin, Mooresville, and Plainfield. However, the need for such a belt route was so distant in the future that the idea was quickly dismissed.

The design of the facilities was based on traffic, local streets, aesthetics, drainage, and economics.⁵ The present and projected traffic volumes were the prime considerations in locating the interchanges and grade separations, in determining the number of lanes for the facilities, and in evaluating the adequacy of the local street system to handle the distribution of Interstate traffic. The final design was also selected by a comparison of alternatives.

Interstate Route 465

When a circumferential route for Indianapolis was designated as a part of the Interstate System in 1955, the general corridor for the route was the existing and projected location of SR 100. Interstate 465 was in essence the revival of the SR 100 bypass concept. The East Leg of Interstate 465 followed Shadeland Avenue (SR 100). Due to development on the north leg of SR 100 (86th Street), the North Leg of Interstate 465 followed the alignment of 91st Street. The West Leg of Interstate 465 was located on the once anticipated alignment of SR 100 adjacent to High School Road. The South Leg of Interstate 465 approximated the anticipated alignment of SR 100 just north of Thompson Road.

Alternate corridors for Interstate 465 were proposed by the Indianapolis Metropolitan Planning Department at early conferences with the Indiana State Highway Department and at early public hearings on the route location. At one conference, Lawrence Sheridan proposed a circumferential route around Indianapolis to link its satellite cities. The belt route was to be located twenty to twenty-five miles from the center of Indianapolis and would connect Lebanon, Noblesville, Fortville, Greenfield, Franklin, Mooresville, and Plainfield. However, the need for such a belt route was so distant in the future that the idea was quickly dismissed.

At other conferences and early public hearings, the Metropolitan Planning Department suggested a location for Interstate 465 two to four miles farther out from the urban area than the proposed location along the alignment of SR 100. The Metropolitan Planning Department felt that a location farther out would displace less people, cause less disruption to present land development, and exert greater control over the growth of the urban area.

Because the proposed location was in the outer areas of urban growth, the planners believed the location along SR 100 might pose a barrier to future growth. If future growth area was too restricted, it would likely vault over the route and spread without restraint resulting in a lack of continuity or congruity in development and, consequently, in a loss of efficiency in government services. When combined with outward pressure of the central business district, a belt route farther out might provide the inward pressure to insure congruous future growth.

On the other hand, the Indiana State Highway Commission felt that a belt route farther out would not provide adequate service to the community or the user. Because of the low traffic demand and adverse distance for traffic on the belt route interchanging with other Interstate Routes, a belt route farther out could not be justified when compared to the proposed location.

Even if Interstate 465 were built farther out in anticipation of increasing future demands, a four or more lane belt route would still have to be built near the alignment of SR 100 to satisfy existing demand and to eliminate the existing deficiencies of SR 100. Moving the belt route out farther would also shift the location from a suburban area designation to a rural area designation and increase the minimum and average spacing requirements for interchanges; consequently, the number of interchanges would

be less in the rural area resulting in less service to the metropolitan area.

The proposed location near the alignment of SR 100 served as a bypass for through traffic and as a collector-distributor route for metropolitan traffic with destinations in the suburban area. In contrast, a location farther out would not serve traffic demands adequately in the suburban sectors of the city. Such a belt route farther out would not relieve congestion on the existing arterials serving suburban movements into the urban core or to other sectors of the urban area.

For all these reasons, the general corridor near SR 100 remained as the proposed location for Interstate 465.

East Leg. The design plans for the extension of SR 100 south from English Avenue were those first developed under the 1956 Interstate Program. When the public hearing on the East Leg of Interstate 465 was held on August 22, 1957, the proposed location for Interstate 465 was the existing and proposed alignment of SR 100 from US 421 to SR 37 except for the stretch between 10th Street and 56th Street where development made the upgrading of SR 100 infeasible and necessitated a relocation of Interstate 465 to the east. Even though Eastgate Shopping Center management agreed to the location along SR 100, provided access to the shopping center was not cut off, they preferred a location for Interstate 465 farther to the east.

Relocation from Shadeland Avenue. In September of 1958, a relocation of the proposed route of Interstate 465 to the east of Eastgate Shopping Center was studied in the hope that the relocation would be better and less expensive. The cost for the original location was based on two, thirty-six foot pavements from the New York Central Railroad to a point midway between 10th Street and Washington Street (US 40) where the alignment rejoins present SR 100 and on the

addition of a third lane in each direction on present SR 100 south to English Avenue. The addition of the third lane on existing SR 100 necessitated the construction of collector-distributor lanes on each side of the present pavement from 10th Street to a point south of the Pennsylvania Railroad providing access to the Eastgate Shopping Center.

In the course of studying the relocation to the east of Eastgate Shopping Center, the Indiana State Highway Commission discovered that the cloverleaf interchange at SR 100 and US 40, which had been built a few years earlier, was inadequate for the anticipated Interstate traffic volumes because the ramps were below modern design standards. Consequently, the increased traffic volumes and the addition of the third lane on the portion of SR 100 utilized for Interstate 465 would necessitate removal and replacement of the SR 100-US 40 interchange, the Pennsylvania Railroad underpass, and the English Avenue interchange. The original location also included a grade separation and ramps for access to Eastgate Shopping Center and the extension of SR 100 from English Avenue to the south of US 52.

The proposed relocation extended from south of US 52 to the New York Central Railroad, approximately one mile east of the original location along SR 100. In comparing the original six-lane location with the four-lane relocation to the east, the east alignment was estimated to cost \$3,484,000 less than the original alignment (\$16,906,000 in cost). When the necessary \$2,710,000 extension of SR 100 from English Avenue to the south of US 52 was included in the cost of the east alignment, the east alignment still was estimated to cost \$774,000 less than the original alignment.

In December of 1958, the relocation of Interstate 465 to the east of SR 100 was recommended to the Executive Director of the Indiana State Highway Commission and Bureau

of Public Roads. On February 9, 1959, the Indiana State Highway Commission announced a new public hearing on the revised location of Interstate 465 to the east of Eastgate Shopping Center. [Refer to Figure 43, p. 395].

At the public hearing of February 19, 1959, the property owners directly affected by the revised route protested its location. The Warren Civic Association, which had been formed to protest the routing of Interstate 465 through the residential areas east of SR 100, suggested that the Indiana State Highway Commission study an alternate route three miles farther out to avoid all residential development.

Comparison of the Revised Route with a Route Farther East. In September of 1961, the ISHC conducted a study that compared the location suggested by the Warren Civic Association with the revised location on the basis of local impact, user cost and initial construction cost. The indicators used to compare the local impact of the alternatives were the cost and amount of right-of-way to be acquired, the number and type of improvements to be condemned, and the availability of access. In comparing the two alternatives, consideration was given to the additional need to construct four lanes on SR 100 from SR 67 to SR 37 if the eastern alternative was built [Refer to Figure 44 , p. 397].

The eastern alternative was found to cost \$1,711,000 less for right-of-way than the western alternative (revised location). The western alternative required 348.8 acres of land, 71 dwelling units and ten commercial buildings as compared to 531.5 acres of land, 18 dwelling units, and 3 commercial buildings for the eastern alternative. Consequently, the western route had a greater destructive local impact on existing development. The western alternative also had two less grade separations and four additional road closures.



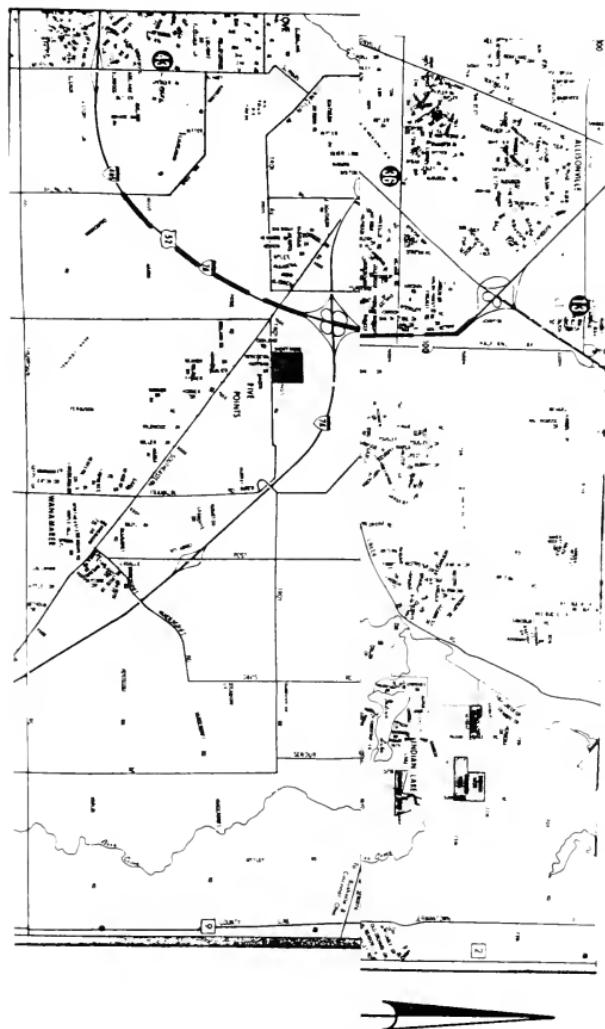


FIGURE 43. INTERSTATE



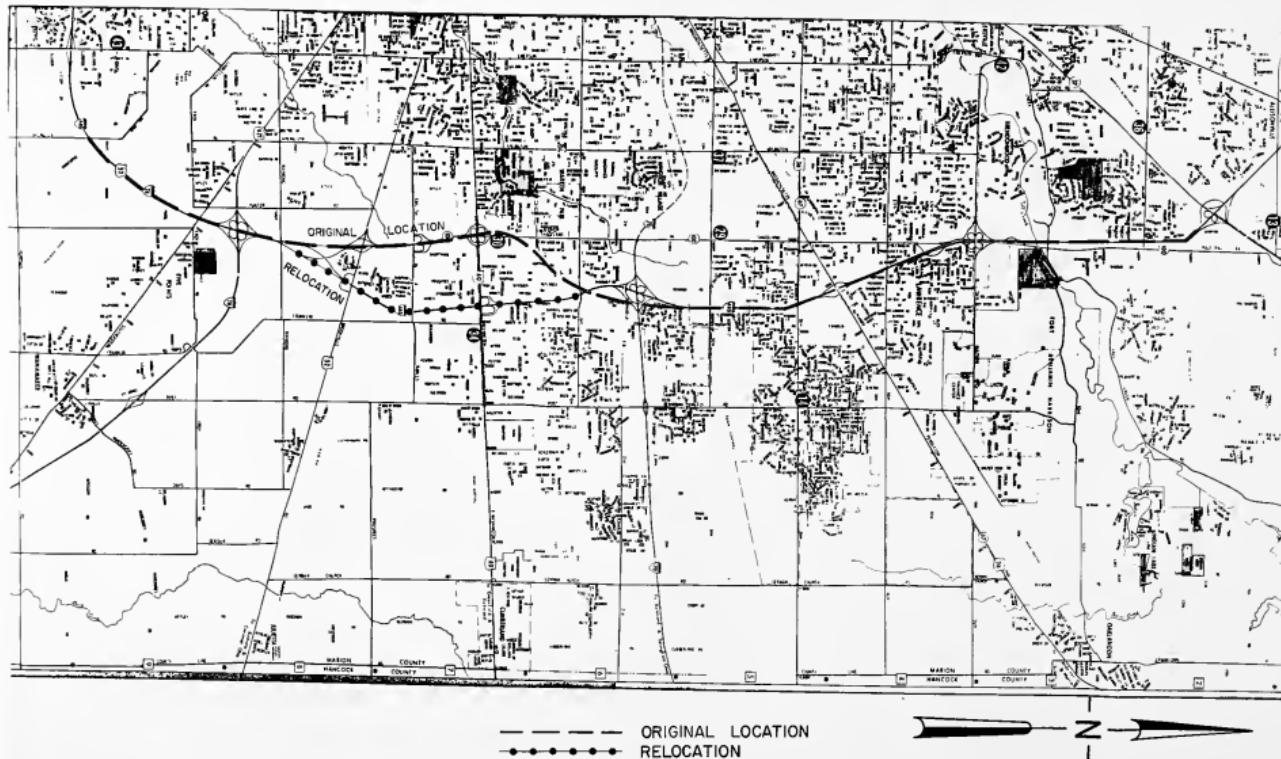


FIGURE 43. INTERSTATE 465—EAST LEG: RELOCATION FROM SHADELAND AVENUE

The Indiana State Highway Commission, on the other hand, estimated that the stimulation of development by the western alternative in the long run would outweigh many of the negative aspects of the location. The western alternative, furthermore, provided greater user service than the eastern alternative because the eastern alternative caused adverse traveling distances between intersecting routes and failed to provide the distribution service to traffic in the suburban area. As the western alternative was 3.7 miles shorter and required less separations than the eastern alternative, initial construction cost was also less for the western alternative. Consequently the Indiana State Highway Commission preferred the western alternative (the revised location for Interstate 465) as shown in Figure 44 (p. 397).

Woolen's Gardens. Soon after the public hearing was held on the revised location of the East Leg of Interstate 465 in February of 1959, conservationists began to protest the severance and the landlocking of a portion of Woolen's Gardens, a virgin timber forest. [Refer to Figure 45 , p.398]. Since Interstate 465 had to recross SR 100 and an interchange was needed at 56th Street, the Indiana State Highway Commission chose to do both by locating Interstate 465 so as to recross SR 100 south of 56th Street. The existence of the Town of Lawrence and Fort Harrison to the east severely restricted latitude in locating Interstate 465.

Early in the location planning, it was thought Interstate 465 would utilize SR 100 from 56th Street to 71st Street for one direction of the dual lane Interstate; this would have reduced the amount of land from Woolen's Gardens. However, this utilization was later found infeasible because Route 100 lacked the heavier pavement needed for Interstate traffic, failed to meet the Interstate alignment standards and was needed as a collector-distributor route for short

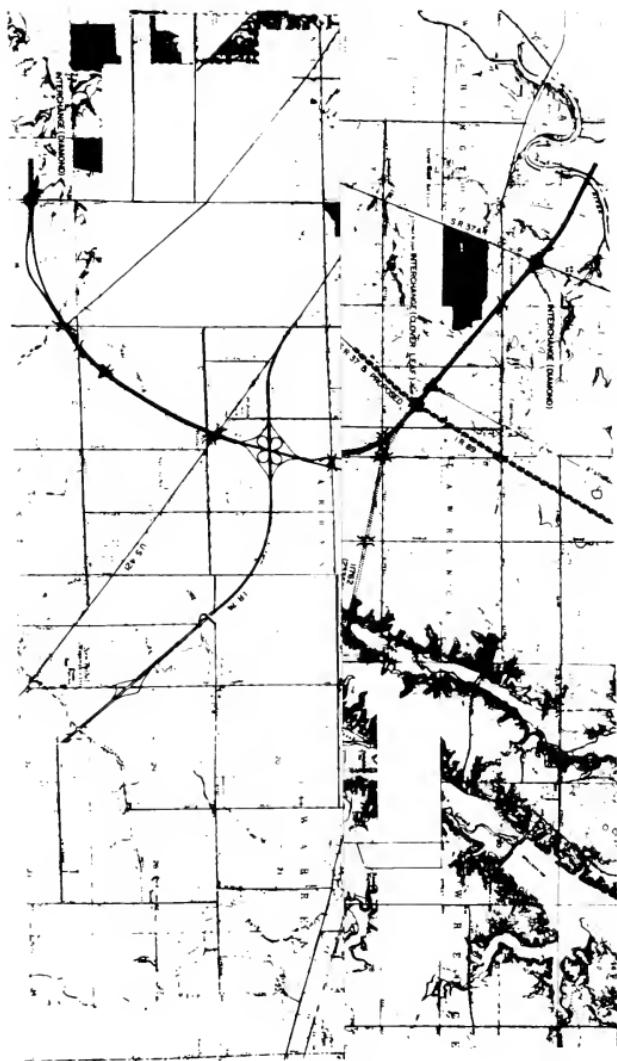


FIGURE 44. INTERSTATION LOCATION⁶

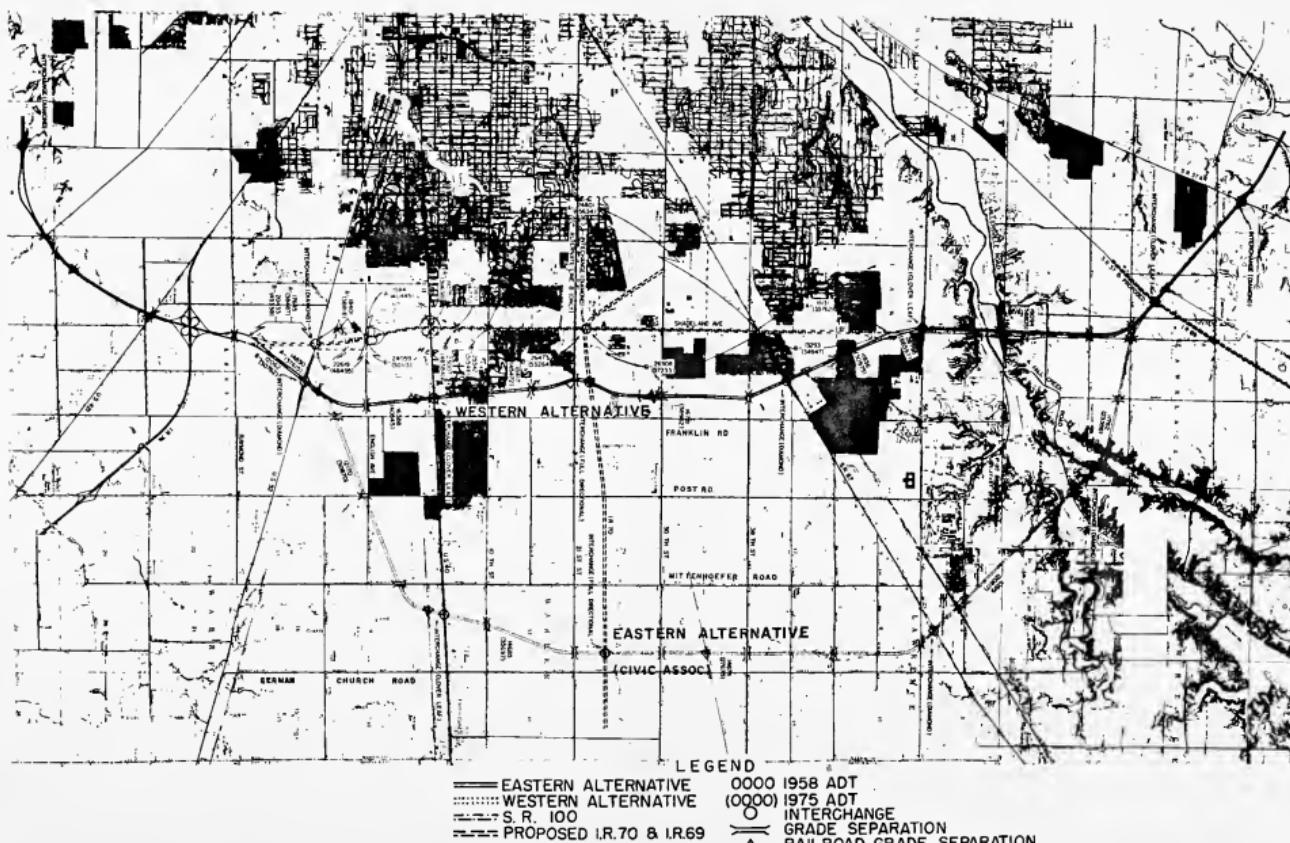


FIGURE 44. INTERSTATE 465 - EAST LEG: COMPARISON OF REVISED LOCATION WITH WARREN CIVIC ASSOCIATION LOCATION⁶

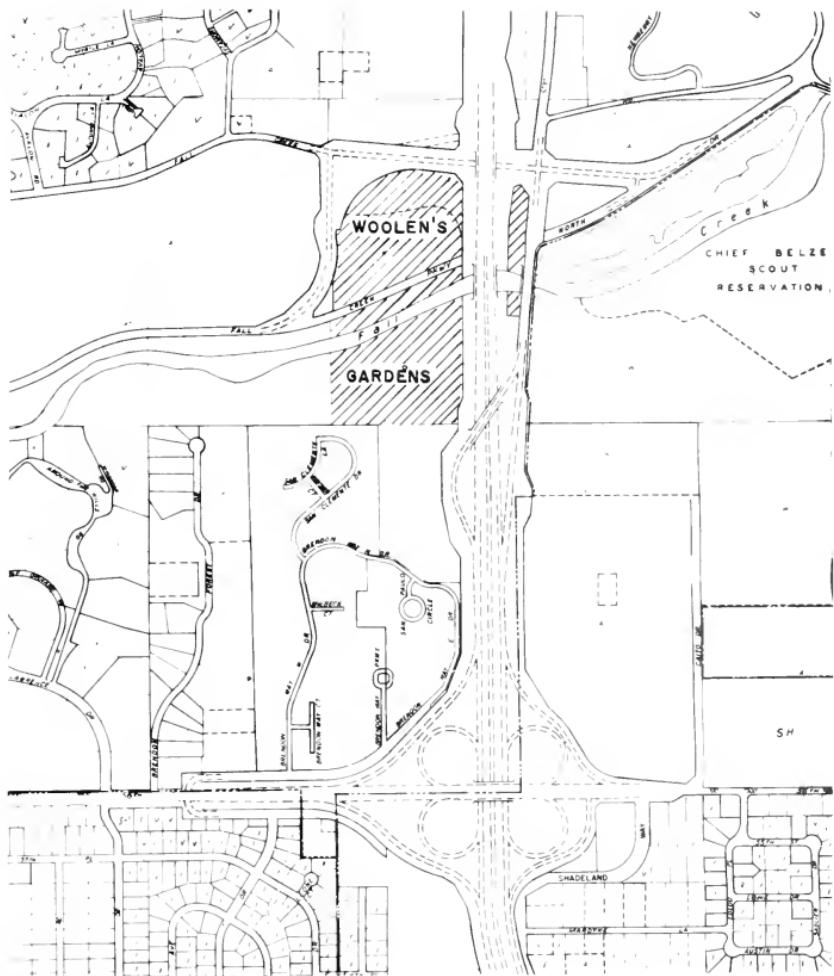


FIGURE 45. WOOLEN'S GARDENS AREA



trips. Woolen's Gardens subsequently became a part of the Metropolitan Park System and the controversy continued.

In March of 1964, the Indiana State Highway Commission and the Metropolitan Park Department resolved the problem of service to the park through an agreement. The conditions of the agreement included the relocation of Fall Creek Parkway so that it would not dead end at Interstate 465, the compensation of the Metropolitan Park Department for the land lost to I-465, the construction by the Highway Commission of a service road from 56th Street north along the west side of the Interstate to the landlocked part of the park south of Fall Creek, and the construction of a foot bridge across Fall Creek from Fall Creek Parkway to the landlocked part of the park by the Metropolitan Park Department. Although the "Section 4(f) Statement" did not exist at that time, the Indiana State Highway Commission agreed that a design would be developed to minimize any adverse effects on the park by the highway location.

Prior to the agreement with the Metropolitan Park Department, access control plans for Interstate 465 had included, among others, a frontage road from Fall Creek Parkway to Fall Creek Road west of Interstate 465 to prevent the dead ending of Fall Creek Parkway at the Interstate.

Fall Creek Road and Fall Creek Parkway. Initial plans for I-465 included the separation of Fall Creek Road on existing location. Fall Creek Parkway on the other hand, was to be closed at the Interstate and connected by new construction to the existing alignment of Fall Creek Road. Due to a steep grade at the intersection of Fall Creek Road and Shadeland Avenue (SR 100), the State during its planning recommended the relocation of Fall Creek Road to the south. A comparison of the cost of constructing the separation at the existing location or at the proposed new location of Fall Creek Road revealed the relocation would be only \$3,000

more. However, Interstate funds participation was limited to the costs that would have been incurred at the existing location, and Marion County would have to pay for the excess costs of relocation.

In April of 1969, the Metropolitan Planning Department requested that the Metropolitan Park Department reconsider its decision and concur with the Metropolitan Planning Department in recommending (to the Indiana State Highway Commission) a revision to the proposed intersection of Fall Creek Parkway and Fall Creek Road west of Interstate 465. As proposed, Fall Creek Road, which was to be relocated to the south for separation with the Interstate, formed the stem leg of a tee intersection with the connecting road to Fall Creek Parkway. This design made Fall Creek Parkway the continuous road.

Fall Creek Road was classified as a Primary Thoroughfare in the Official Thoroughfare Plan and as a four-lane divided Primary arterial in the Recommended Thoroughfare Plan of the Indianapolis Regional Transportation and Development Study (IRTADS). If the proposed design was not revised, the Metropolitan Planning Department feared that through traffic would increase severely on Fall Creek Parkway. The development of park facilities along the parkway and the utilization of the road as a scenic drive would be endangered and reconstruction of intersections along the parkway would become necessary. The recommended design revision was to relocate Fall Creek Parkway to the north to intersect with Fall Creek Road at a Tee intersection so that Fall Creek Road would be the continuous road. This design revision was made, and the separation of Fall Creek Road and I-465 was built.

Interchange of Interstate 465 and Interstate 70. When only portions of an Interstate Route were completed, there was typically an overloading of the interchange and the crossroad at the temporary terminus. Because Interstate 70

had not been completed into the urban area, the East Leg of Interstate 465 (which was completed in January of 1968) became the temporary terminus for Interstate 70; and the three-loop cloverleaf interchange at Interstate 70 and Interstate 465 was overloaded.

As Interstate 465 was still the temporary terminus of Interstate 70 in February of 1972 and accident experience had been poor, the Indiana State Highway Commission requested approval of construction of a directional ramp at this interchange. An increase in the travel demand for the design year had also been forecast. The directional ramp was to replace the inadequate northwest loop and eliminate the serious weaving problem between the two western loops.

Tight loops were conducive to accidents, particularly the upgrade loops, such as the northwest loop of this interchange. At the time the interchange was originally planned two higher type interchanges (a full directional and a figure-eight), which would not have had a weaving problem, were considered and right-of-way had been purchased for a full directional interchange. However, the Bureau of Public Roads found that the design year volumes did not warrant the higher cost interchanges. With the unanticipated increase in traffic growth and high accident rate, the conditions now warranted the construction of the directional ramp. The request for the directional ramp was approved by the Federal Highway Administration, and the redesign of the interchange was completed.

North Leg. In 1955, the Indiana State Highway Department established a general location for the North Leg of Interstate 465 along the alignment of 91st Street. At the time the location was established, the route passed through an area of rapid development. To control development of land along the 91st Street corridor, the Metropolitan Planning Department utilized its power to restrict development on the



land that would be necessary for the Interstate; however, the development restriction lapsed before the Indiana State Highway Department established the final location through the lengthy public hearing and Federal location approval process. With the lapse of the development restriction, developers demanded that the right-of-way be purchased or that they be allowed to develop the land as they pleased.

Due to the uncertainty of the location and the rapid residential development along the corridor, the location of Interstate 465 along 91st Street was subjected to extensive criticism by property owners. The property owners even obtained a court order to prevent the public hearings on the 91st Street alignment scheduled for September of 1959. In October 1959, Governor Handly recommended that the Indiana State Highway Department abandon the 91st Street alignment.

Lochner Location Study. Because of objections by the property owners and uncertainty regarding the best location of the route, the Indiana State Highway Commission requested H. W. Lochner, Inc. to evaluate several alternative alignments for the proposed route on the basis of traffic service, impact on the community and cost. The study corridor stretched from Interstate 65 on the west to the East Leg of Interstate 465, and from below present SR 100 (86th Street) on the south to Carmel, Indiana, on the north. [Refer to Figure 46, p.404].

In determining the alternatives, the present land use was inventoried and forecast for the future. Existing subdivision development was generally bounded by 71st Street on the south, 111th Street on the north, Ditch Road on the west, and Haverstick Road on the east. With continued residential expansion in the next fifteen to twenty years, development would probably extend north to Carmel, eastward to and beyond new SR 431 and westward beyond US 421. Only areas which were subject to flooding or low lying would

remain agricultural. Since the disruption of large subdivisions by improper location could have serious and lasting consequences, Lochner suggested a location north of the highly developed subdivision areas.

As shown in Figure 46 (p. 404), the alternate locations evaluated were alternative A along SR 100 which was the upgrading of SR 100 to Interstate standards; alternative B along 90th and 91st Streets which had been the location proposed by the Indiana State Highway Department in earlier years; alternative C which was a variation of alternative B between Township Line Road and Westerfield Road; and alternative D which bulges up to 111th Street to avoid residential development.

Alternative A provided the best traffic service to Interstate travel because bypass traffic encountered a minimum amount of adverse travel; however, alternative A was more destructive to existing development and more costly (\$29,800,000) overall than the other alternatives. The right-of-way cost for alternative A (\$6,220,000) was \$3,120,000 more than the closest alternative.

Due to its greater length, alternative B provided slightly inferior travel service to that of alternative A; however, alternative B would have caused considerably less destruction to existing development than alternative A in terms of buildings taken (37 as compared to 96) and right-of-way cost (\$3,100,000 as compared to \$6,220,000). In fact, the lesser right-of-way cost for alternative B accounted for the difference in total cost between alternative B and alternative A (\$26,280,000 as compared to \$29,800,000). Nevertheless, alternative B would sever two impressive subdivisions, Wild Cherry Corner and Woodland Heights, and the interchanges at Meridian and College Avenues would be costly due to existing development.

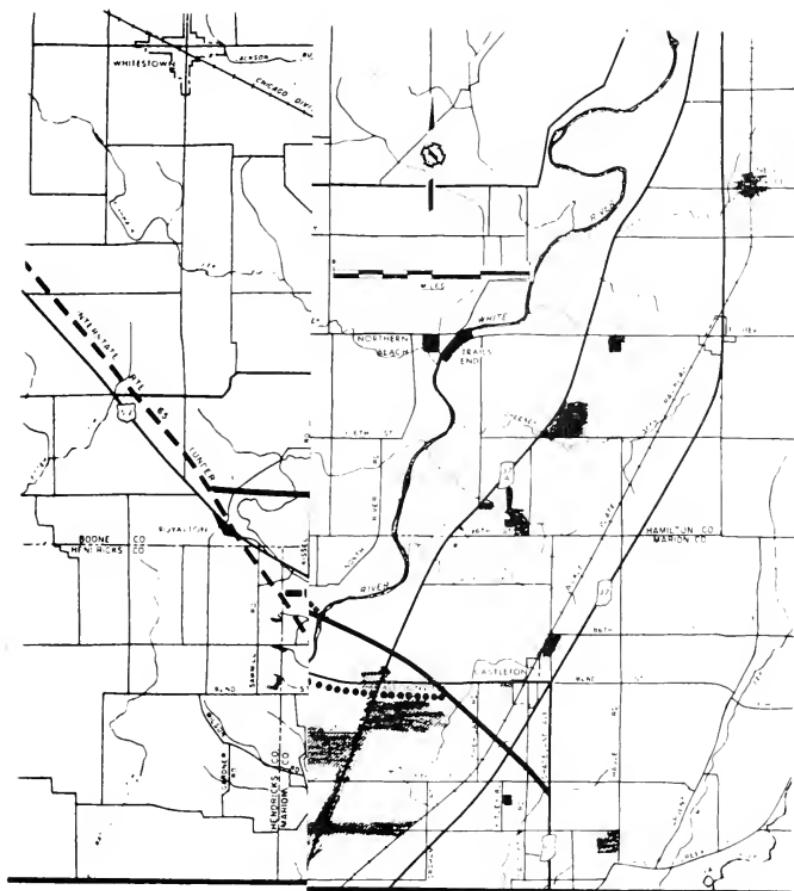


FIGURE 46. INTERSTATE

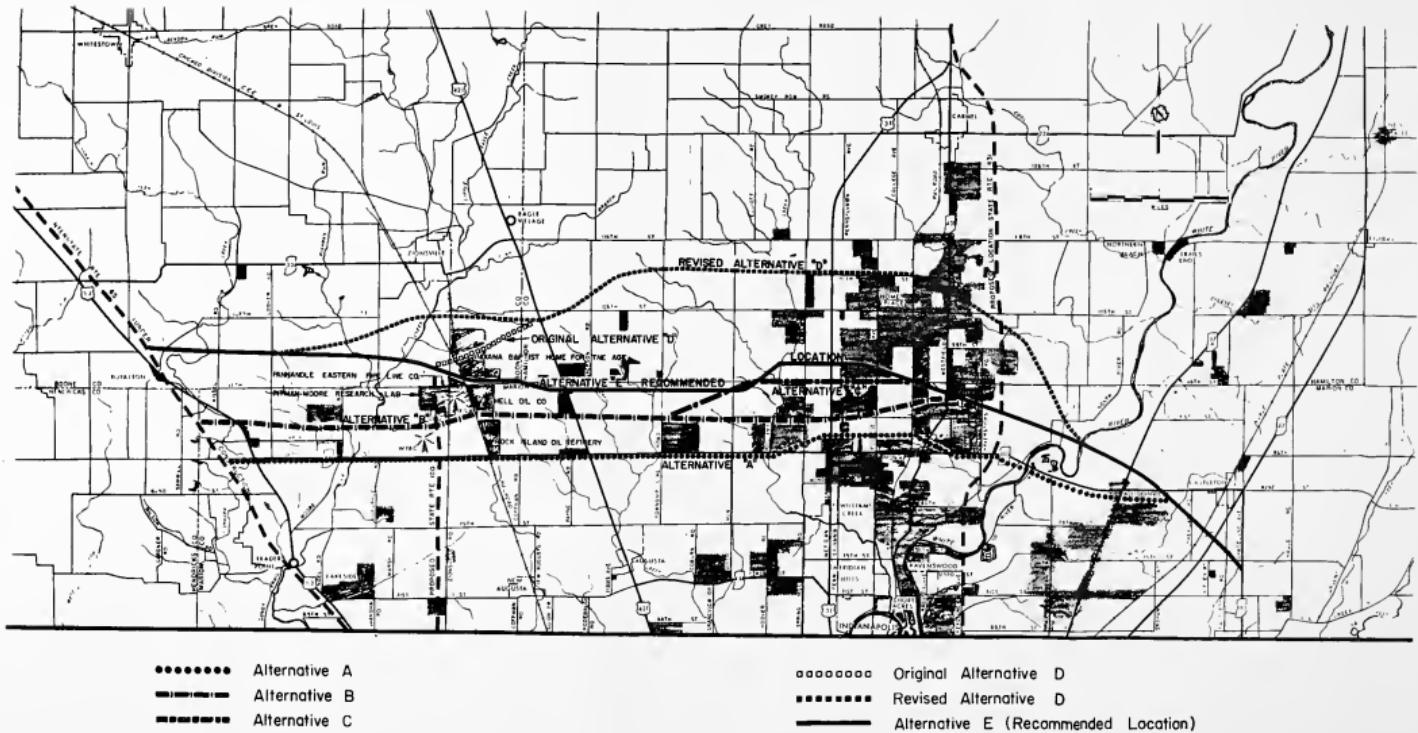


FIGURE 46. INTERSTATE 465—NORTH LEG: LOCATION ALTERNATIVES⁷



Alternative C was located to overcome objections to alternative B between Township Line Road and new SR 431. Alternative C shifted from 91st Street to 96th Street to avoid some of the residential development. Since alternative C would be less in competition with SR 100 than the previous alternatives, alternative C would attract greater volumes in fifteen years; however, initial volumes were similar to alternative B.

The total cost of alternative C (\$26,165,000) was only \$75,000 less than alternative B because the reduction in right-of-way cost for alternative C (\$2,770,000) was offset by the increase in construction cost due to the greater length of alternative C. Alternative C would have less impact on the community than the previous alternatives although local objections by the property owners would still remain. The consultant felt that alternative C would retard development north of the route and that the diagonal lengths of the route would cause greater severance damages. "Since alternate C presented no cost advantage and would not be any more acceptable, attention was turned to a fourth alignment."⁸

As alternative D would be less in competition with SR 100, it would carry higher volumes in the future and lower volumes at the present than the other alternatives. The consultant felt the additional 0.6 mile length would not cause serious adverse travel for through traffic. The total cost of alternative D (\$25,905,000) was comparable to alternatives B and C; however, alternative D further reduced right-of-way cost to \$2,175,000 and required the taking of only twenty-seven buildings. This alternative minimized the harmful effect to existing development, and its proximity to Zionsville and Carmel and open land would stimulate greater development.



In comparing all of the alternatives, alternative D was expected to attract and serve more traffic in the future because it was least competitive with existing SR 100 and it would attract more short haul traffic due to the lack of any nearby substitute. However, the greater length of alternative D would cause slightly more adverse travel for through traffic. Alternative D had the least disruptive effect upon existing and planned development because it skirted such development.

Although the cost margin for alternative D was not decisive, it cost \$600,000 less for right-of-way than the nearest alternative. The consultant assumed that the cost for related east-west highway improvements would be ultimately comparable regardless of the alternative alignment selected. In other words, if a southern location was recommended, a northern east-west route of high type would ultimately have to be built; the opposite was also true. Consequently, the recommendation of alternative D would require the expansion of existing SR 100 to four lanes. The consultant felt alternative D was the best alternative based on traffic service, impact and cost in January of 1960.

When the consultant's location study was reviewed, the Indiana State Highway Department discovered that alternative D would disrupt the expansion plans of the Indiana Baptist Home for the Aged, and the Bureau of Public Roads objected to the alignment because of adverse travel distance for Interstate traffic. Consequently, the consultant was requested to restudy his recommendation.

Alternative D was then relocated to the north of the Baptist Home property. However, the revised location would have cost an additional \$460,000 because of two railroad undercrossings, added length for connection to the West Leg of Interstate 465, and the problem of providing a flood free alignment over Eagle Creek. The connection to the West Leg



of Interstate 465 would have been more costly due to the rough terrain and would have resulted in more indirection for through travel.

Because of the disadvantages of the northern relocation of alternative D, the consultant studied a location along the south edge of the Baptist Home property adjacent to 96th Street. The southern location proved to be more economical than the northern location because of easier crossings of the railroad and Eagle Creek. The southern location also provided better traffic service to the West Leg of Interstate 465.

With the adoption of the southern alignment, however, the utilization of alternative D east of the Baptist Home became difficult. The distance between 96th Street and the alignment of alternative D along 111th Street would necessitate long diagonals which increased user costs as a result of over four miles of indirectional travel, increased severance damages, and increased the cost of construction due to the added length and increased number of required grade separations. Consequently, alternative locations between the Baptist Home property and White River were restudied.

The consultant narrowed the study area to a tight corridor centered on the existing alignment of 96th Street. Because alternatives within this corridor would provide the shortest and most direct route, the costs of construction and vehicle operation would be minimized even if right-of-way acquisition was more costly than a more northerly corridor.

Two basic alternatives were studied within the 96th Street corridor. One alternative was parallel and immediately to the north of 96th Street and utilized 96th Street as a frontage road for property on the south side of the Interstate. Although the location was the most direct, it would cause considerable damage to existing



development along 96th Street, especially at the interchanges.

The second alternative was located near 96th Street but far enough away to minimize damage to existing development. The second alignment followed the quarter section line south of 96th Street from east of the Baptist Home to Ditch Road; shifted northward to the quarter section line north of 96th Street to avoid heavy residential development south of 96th Street and fronting 96th Street east of Ditch Road; and angled southeast at College Avenue to rejoin alternative C at the Monon Railroad.

Since the second alternative passed through relatively undeveloped land, it minimized the impact on the community and right-of-way costs. The second alternative, termed alternative E in Figure 46, p. 404 provided travel service comparable to the alternative just north of 96th Street and was estimated to cost \$300,000 less than the alternative just north of 96th Street. As a check on the validity of recommending alternative E, user benefit cost ratios were determined for alternate E and revised alternative D as compared to alternative A. The user benefit cost ratio revealed that alternative E offered superior traffic service to revised alternative D. Alternative E was the preferred route that the Indiana State Highway Commission presented at the public hearings and was the alignment ultimately constructed.

Continued Opposition. The relocation of Interstate 465 from 91st Street to 96th Street did not quiet opposition. Public hearings on the 96th Street alignment were scheduled for June 21, 1961 for the section from Interstate 65 to Ditch Road and for June 22, 1961 for the section from Ditch Road to East 71st Street; however, the Boone County Commissioners obtained a temporary restraining order cancelling the public hearings. The Boone County officials



claimed that the Indiana State Highway Commission had failed to inform them that the route was limited access and would close several Boone County roads. The Boone County Commissioners, however, dropped out of the legal battle after talking to the Indiana State Highway Commission.

The temporary restraining order against further hearings on the proposed route was soon dissolved, and a temporary injunction to halt construction of the North Leg of Interstate 465 was denied. A hearing on a permanent injunction was set for June 29, 1961, but was cancelled while an appeal of the temporary injunction ruling was pending before the Indiana Supreme Court.

Because another restraining order plea was denied the opposition, the public hearings were rescheduled and conducted on July 12th and 13th of 1961. All five alternatives were described at the public hearings. The State favored alternative E over revised alternative D on the basis of cost, impact on the community and traffic service. The relocation of alternative D north of the Baptist Home increased the total cost of alternative D to \$26,100,000 and the total cost of the West Leg of Interstate 465 due to an added three-quarter mile of length. Alternative E was estimated to cost \$25,600,000 which was less than any of the other alternatives.

Although alternative D would take twenty-one homes as compared to thirty-two homes for alternative E, sixty-two homes would be within two hundred feet of the right-of-way of alternative D as compared to thirty-three homes for alternative E. On this basis, the Indiana State Highway Commission felt that alternative E would have a lesser adverse impact on existing development. The indirection and greater length of alternative D made alternative E more favorable from the standpoint of user service.



Marion County officials, the Chamber of Commerce, and the Highway Coordinating Committee of Marion County endorsed the proposed alignment along 96th Street (alternative E). Strong opposition to the proposed alignment was presented by the Northern Metropolitan League of Indianapolis. The Northern Metropolitan League backed the temporary restraining orders against the public hearings and was pressing for a permanent injunction to halt construction. The Northern Metropolitan League claimed the Indiana State Highway Commission had violated State and Federal public hearing and route location approval procedures and supported the 111th Street alignment (alternative D) or an alignment even farther away from the urban area. Opposition to the proposed alignment also came from a developer, whose proposed \$2,500,000 shopping center-apartment complex at 96th Street and Meridan, would be bisected by the route.

In the public hearing summary that accompanied the submission of the transcript to the Bureau of Public Roads on August 7, 1961, the Indiana State Highway Commission refuted the testimony of the Northern Metropolitan League of Indianapolis that public hearing and route location procedures were violated. The summary also noted that the Boone County Commissioners were on at least two occasions afforded the opportunity to discuss the project with the Indiana State Highway Commission prior to the public hearings.

The Indiana Supreme Court denied the appeal of the temporary injunction to halt construction on the proposed location; and on December 12, 1961, the Bureau of Public Roads approved the proposed location along 96th Street.

Despite setbacks, the Northern Metropolitan League continued opposition to the approved route location for two to three more years. The form of opposition was primarily letters to Indiana's representatives in Congress.

Design Changes. In the July 3, 1968 plan review of Interstate 465 from Fall Creek to White River, in accordance with the Intergovernmental Cooperation Act of 1968, the Metropolitan Planning Department recommended that additional right-of-way be acquired through the SR 37-A (Allisonville Road) interchange area to permit the future improvement of the road to a four-lane divided Primary Arterial as set forth in the Recommended 1985 Thoroughfare Plan, that additional right-of-way be acquired through the SR 100 (82nd Street) separation to permit the future improvement of the road to a four-lane divided Primary Arterial as set forth in the Recommended 1985 Thoroughfare Plan, and that the East 75th Street separation be eliminated because the road was currently a collector and was not planned for any type of arterial in the Recommended 1985 Thoroughfare Plan.

Although it was considered ideal to provide for future right-of-way needs on roads intersected by new construction, the Indiana State Highway Commission felt that it was financially infeasible to expend limited funds for additional right-of-way on roads that were not scheduled for reconstruction in the foreseeable future. The State also noted that the proposed additional acquisition was only a small portion of the right-of-way needed to reconstruct the roads to logical termini.

The Indiana State Highway Commission reported that the East 75th Street separation was essential to local traffic circulation in the rapidly developing area east of Interstate 465; the lack of a separation would cause up to one and one-half miles of adverse travel for residents and for pupils of a grade school on East 75th Street. In making the recommendation to close East 75th Street, the Metropolitan Planning Commission also expressed concern regarding access to adjacent lands due to the embankment needed to carry the street over Interstate 465 and eventually SR 37 if the Northeast Freeway was built.



The Federal Highway Administration concurred with the Indiana State Highway Commission viewpoints and agreed to retain the East 75th Street separation. Conditions warranting its construction had not changed and the separation had been included in the plans for the public hearing and all subsequent announcements.

On November 4, 1968, the Indiana State Highway Commission requested modification of the plans to permit the dual laning of the SR 100 grade separation and the dual laning of SR 37A through the interchange area. Both changes were requested on the basis of the need to provide increased safety and capacity in an area with rapidly developing high traffic generators. Furthermore, the changes were to be limited to those financed by Federal Aid Interstate funds and the developers of Castleton Shopping Center. The developers were to provide right-of-way on the north side of SR 100 for dual laning, to assume the cost of dual laning SR 100 from SR 37A to Knue Road, and to pay for the State's share of the added dual lane structure carrying SR 100 over Interstate 465. The Indiana State Highway Commission suggested that Interstate funds finance ninety percent of the cost of the added dual lane structure carrying SR 100 over Interstate 465 and of the dual laning of SR 37A from SR 100 through the interchange area to 91st Street.

After a tentative agreement was reached on November 7, 1968, the Federal Highway Administration formally agreed on November 22nd that the modification of the Interstate 465/SR 37A interchange and the four laning of the separation structure of SR 100 were warranted. The changes were eligible for Federal Aid Interstate funding provided there was concurrent construction of four lanes on SR 100 and SR 37A to logical termini. In reviewing the State's interchange plans, the Federal Highway Administration suggested that the logical terminus for SR 37A was 96th Street and that right-of-way be



reserved for future construction from north of 86th Street (the end of planned construction with the interchange) to 96th Street; Indiana agreed to reserve such right-of-way for the four laning of SR 37A to 96th Street.

As 86th Street did not then exist at the north end of the I-465/SR 37 interchange, the Federal Highway Administration later limited Federal Aid Interstate fund participation to the touchdown points and excluded the improvement of the 86th Street intersection with Interstate funds. The Federal Highway Administration also requested a commitment to improve the SR 37A/SR 100 intersection in the future. The State made the commitment.

West Leg. The alignment of the West Leg of Interstate 465, which roughly paralleled the alignment of High School Road, incurred no major revision since the corridor had been designated in 1955. At the public hearing on the proposed location on October 15, 1957, the businessmen and property owners in the Ben Davis area had diverging views on the proposed location. The Chamber of Commerce and US 40 West Businessmen's Association supported the proposed location; and some property owners, of course, objected to the proposed location. The Metropolitan Planning Commission suggested an alternate location two miles farther west near Girl's School Road.

When Indiana decided to extend the West Leg of Interstate 465 from Interstate 65 to the North Leg of Interstate 465 with Federal Aid Primary Funds, the interchange of Interstate 465 and Interstate 65 was adjusted to accommodate the extension of the West Leg of Interstate 465 (termed proposed SR 100).

After initial stage construction of the interchange, the geometrics for the completed interchange were revised in August of 1967 as a result of new traffic assignments. The revised traffic assignments revealed that the major



traffic movements through the interchange would be the northbound and southbound flows between proposed SR 100 (extension of the West Leg of Interstate 465) and the West Leg of Interstate 465. Because this movement was estimated to be four times greater than the movement between Interstate 465 and Interstate 65, the State proposed that the Interstate 465 and SR 100 lanes be continuous through the interchange area and that existing ramps between Interstate 465 and Interstate 65 be modified to connect with the through lanes of Interstate 465 and SR 100 by normal exits and entrances. The revision of the lane alignments and grades was to be accomplished by resurface wedging of the existing pavements. The Federal Highway Administration approved the revisions, and the modifications were constructed.

South Leg. The general location for the South Leg of Interstate 465 fell in a corridor between Thompson Road and Hanna Avenue, and the southwest corner of the route was located near the intersection of SR 67 and Mann Road. At the public hearing of October 21, 1957 on the proposed route, The Decatur Township Trustees requested that the alignment be changed to cross SR 67 near Valley Mills, as earlier proposed, to avoid the Kiwanis Boy Scout Camp. The Decatur Township Civic League favored the proposed location, requested an interchange for Mann Road, and opposed the construction of Interstate 465 farther north.

Decatur Township later complained that a hearing was not held in their township, and the Indiana State Highway Commission held another hearing on the proposed location on March 26, 1958. When this hearing transcript was forwarded to the Bureau of Public Roads on April 9, 1958, the Indiana State Highway Commission requested concurrence in the re-location of the southwest corner of Interstate 465 from the intersection of SR 67 and Mann Road to a crossing of SR 67 near Valley Mills. [Refer to Figure 47, p. 415].

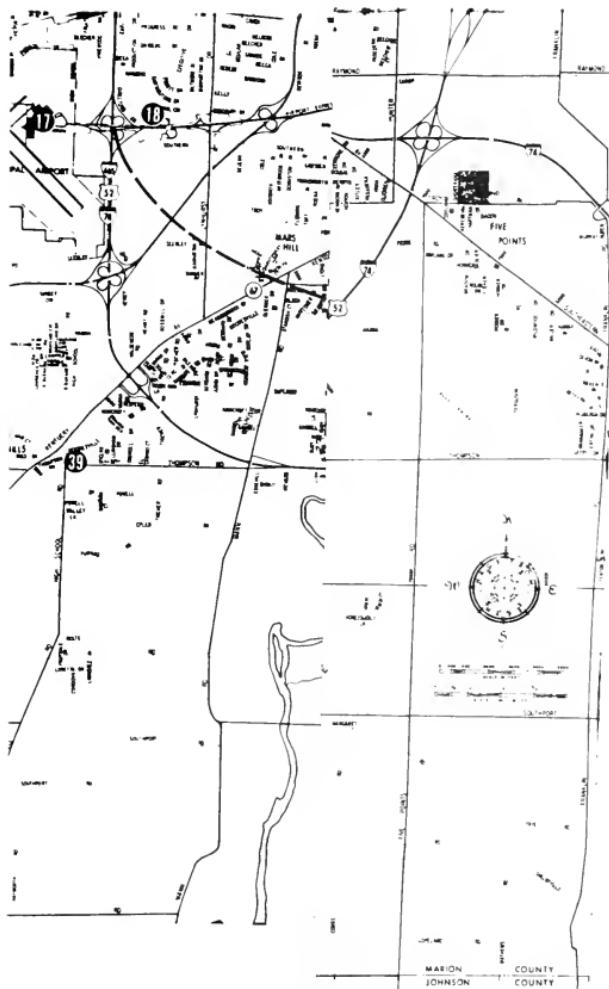


FIGURE 47. INTERST.



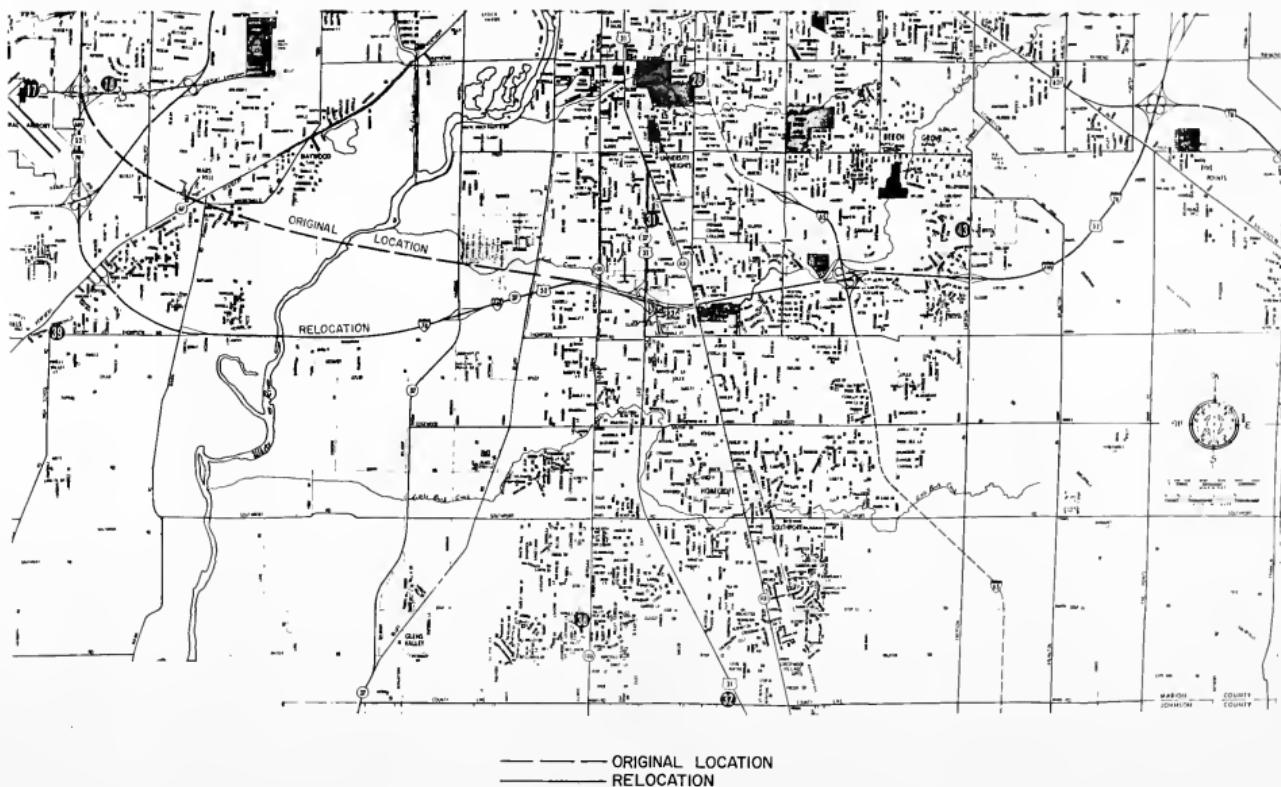


FIGURE 47. INTERSTATE 465 — SOUTH LEG: RELOCATION OF SOUTHWEST CORNER



The location of the southwest corner of Interstate 465 farther out would provide greater future user benefits, serve the rapidly developing industrial area better, cause less disruption to existing land uses and dislocate fewer people. As the route had been originally planned, traffic from existing and future development would have to travel two miles on SR 67 through a heavily developed area to get to Interstate 465; the relocation farther out would save 1.8 miles of adverse travel distance. The Metropolitan Planning Commission in cooperatin with Decatur Township had zoned large tracts of land along SR 67 in the vicinity of Valley Mills which would increase traffic generation in the area southwest of Interstate 465.

A comparison of the outer and inner locations of the southwest corner of Interstate 465 on June 16, 1958 revealed that the outer location provided greater user benefits and was cheaper. Considering only the existing locations of residential and industrial generators, the increased cost of the inner location could be offset by a reduction in user benefits over a seven year period. However, traffic growth would come from expansion of traffic generators which expanded away from the inner location. Consequently, future growth would be better served by the outer location because it would provide more direct service to the area. Furthermore, the advantage of the inner loop to through traffic would diminish as local traffic became proportionately greater.

Interchanges. Early in the location planning, interchanges had been planned at SR 135, SR 431, and Carson Avenue; however, they were eliminated because their proximity to adjacent major interchanges would disrupt traffic operations. As requested by the Decatur Township Civic League, a half-diamond interchange was constructed at Mann Road when the outer location for the southwest corner of Interstate 465 was selected.



In June of 1966, Beech Grove requested an interchange at Arlington Avenue. The State denied the request. Such an interchange had not been included in the access control plans approved by the Bureau of Public Roads, and additions to the originally designated system were not readily permitted. Arlington Avenue was also not in the State highway system, and Beech Grove or Marion County would have to finance the interchange and the improvement of Arlington Avenue to logical termini. If the city or county made such a commitment, the Indiana State Highway Commission would consider modification of Interstate 465 to permit the interchange. Beech Grove or Marion County did not make the commitment, so the interchange was not built.

Lake Shore Golf Course. Interstate 65 was located in a narrow corridor of undeveloped land from Keystone Avenue south. Interstate 465 was also located in a narrow corridor of undeveloped land from US 31 to Emerson Avenue. Deviation from the narrow corridors would result in considerable damage to existing subdivisions. The narrow corridors of Interstate 65 and 465 intersected in the southeast corner of the Lake Shore Country Club property. The Lake Shore Country Club strongly protested the loss of property; however, the Indiana State Highway Commission explained that any other location would have more serious, adverse consequences. Because thirty-three to fifty-five acres of right-of-way would be required for the interchange of Interstate 65 and 465, any alternative location would require the dislocation of seventy-five to one hundred and sixty-five families.

Interstate Routes inside Interstate 465

Prior to the Interstate Program, the Indianapolis Metropolitan Area lacked an expressway or freeway system. In fact, the only expressway in the urban area was the Madison Avenue Expressway. As a part of the Interstate Program, the



Indianapolis Metropolitan Area was to receive a rather extensive freeway system. The monumental task of planning the routes began in 1956. Development of the freeway system was to stretch over more than a decade to insure consistency with the existing and future highway system and compatibility with existing and future land use.

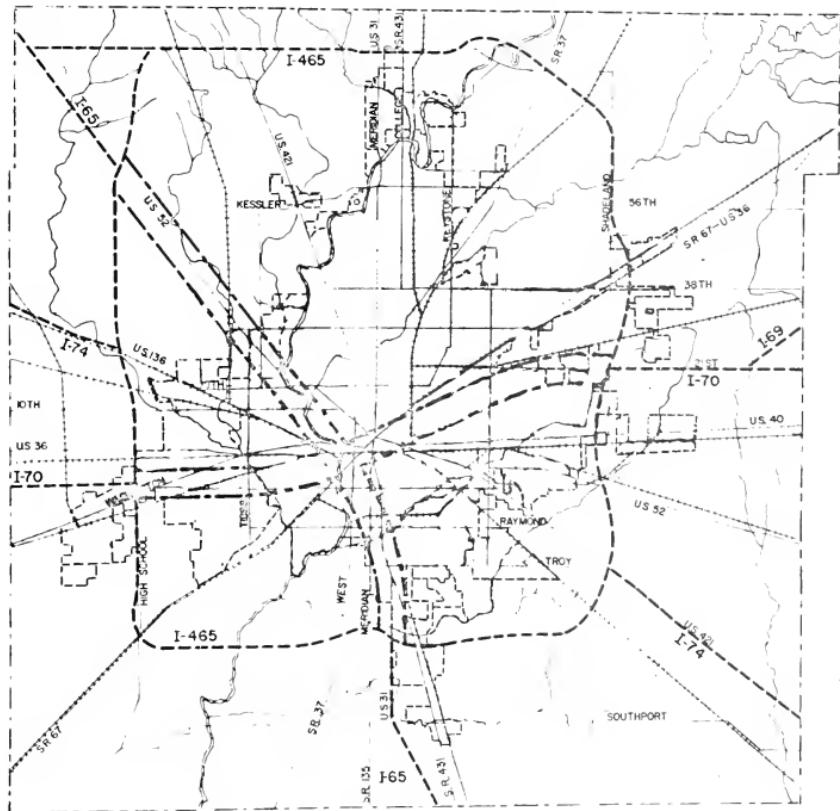
Location Studies. In locating the radial routes, the consultant (H. W. Lochner, Inc.) was given the tentative location of Interstate 465, four external control points on Interstate 465 to which the radial routes were to be connected, and general corridors for the radial routes as shown in Figure 48 (p. 419). Interstate 70 was to traverse the urban area in an east-west direction as a redevelopment of US 40. Interstate 65 was to follow the general corridor of US 52 from the urban core to the northwest and to follow the general corridor of US 31 from the urban core to the south.

Since the most complex location problems would occur in the densely developed urban core, the most economic and suitable location in the urban core would influence the location of the balance of the system. Consequently, the consultant first determined the location of the Inner Belt.

Inner Belt. Although the primary purpose of the Interstate System was to connect metropolitan areas and not necessarily to provide urban areas with freeway systems, Interstate routes through urban areas were considered necessary to collect and distribute Interstate traffic. If the decision was made to penetrate the urban area with Interstate routes, it was logical that the routes serve the principle traffic generator in the urban area, the central business district (CBD).

If Interstate 65 and 70 would have intersected in the CBD, they would have been highly destructive to existing development and would have concentrated the distribution and collection of traffic in a small area overloading the





General Corridors for Interstate Routes inside Interstate 465

— — — — Proposed Locations of Interstate Routes outside Interstate 465

Existing Primary Highways and Major Streets

FIGURE 48. GENERAL CORRIDORS FOR INTERSTATE ROUTES INSIDE INTERSTATE 465⁹



already congested local circulation system. A belt route located as closely to the CBD as right-of-way values made reasonable would distribute the terminating traffic so that the local circulation system would not be overloaded. Beside right-of-way values, the consultant felt that the location of the belt route depended on the distance from the center of the CBD that was necessary to permit free circulation in the area, to make the transition from high speed travel to low speed travel, and to permit the development of parking facilities.

Based on property values, the general study area for the north leg of the Inner Belt fell between 10th and 14th Streets and Senate and Central Avenues. Four basic east-west alignments were evaluated on the basis of right-of-way costs. An alignment lying between 11th and 12th Streets was found to be the least costly.

To the east, the most economical location for the east leg of the inner belt fell between Davidson and Pine Streets. This location also provided the most favorable crossing of the railroad complex east of the CBD.

Right-of-ways values dropped considerably to the south of Merrill Street; however, major industrial establishments along West Street tightly controlled the available locations. The most economical and practical location fell between Ray and Wilkins Streets.

Because of the short distance between the heart of the CBD and the White River, the location of the west leg of the Inner Belt was difficult. Industrial and commercial establishments were highly concentrated in the area and State offices were expected to expand in the area. The location was further complicated by a monument in Military Park which was in the National Register. The existence of the Indianapolis Water Company Canal and the vertical configuration of railroads ruled out any elevated or depressed freeway. After



an exhaustive review of land uses in the area west of Monument Circle, a west leg of the Inner Belt was found impractical.

Nevertheless, the west leg of the Inner Belt was still needed to accommodate cross-town travel, to stimulate balanced development of the CBD, and to adequately distribute terminating traffic to the CBD so that the Interstate Inner Belt and the CBD circulation system would not be overloaded. The study Highway Transportation for the Indianapolis Metropolitan Area of 1957 recommended the construction of an at-grade expressway, having design standards somewhat less than Interstate freeway standards, along the general line of the Indianapolis Water Company Canal and Missouri Street. "The importance of this improvement was sufficient to warrant further detailed engineering studies so that this link, though not a part of the Interstate System, would be afforded suitable connections in the design of the Interstate Freeways."¹⁰ Until the west leg of the Inner Belt was constructed, the study recommended that a one-way system comprised of Senate and Capitol Streets serve the purpose of the west leg, the distribution of freeway traffic.

With the basic location of the Inner Belt portion of the freeway system completed, Lochner proceeded to locate the radial routes by connecting the legs of the Inner Belt to the external control points on Interstate 465. The basic criteria for locating the radial routes were as follows: (1) routings were to be direct as practicable; (2) the junctions of the legs of the Inner Belt were to be as widely spaced as possible to avoid concentration of traffic at any one point, to reduce weaving movements, to provide sufficient length on the legs of the Inner Belt for weaving and distribution, and to minimize the number of lanes on the Inner Belt; (3) and the radials should connect at the corners of the Inner Belt to allow terminating traffic a choice of two distributor legs



of the Inner Belt, providing flexibility in traffic operation and avoiding concentrations of traffic on the distributor legs or the local circulation system.¹¹

West Route. Due to the three-sided Inner Belt and the location of the external control point for Interstate 70 on Interstate 465, the study corridor for the West Route extended due west in the vicinity of Morris Avenue from the south distributor leg of the Inner Belt. As shown in Figure 49 (p. 423), the recommended alignment in July of 1957 extended west from the south distributor of the Inner Belt, crossed the White River and Kentucky Avenue south of Ray Street; angled northwest to McCarty Street; continued west along the south side of McCarty Street to the Pennsylvania Railroad tracks; followed the railroad tracks which were crossed in the vicinity of Fleming Streets; angled northwest to cross Washington Street at Laclede Street; and continued west between Delmar and Oliver Streets to Interstate 465. The alignment paralleled the south side of the Pennsylvania tracks from McCarty to Fleming Streets to minimize the amount of damage to existing development.

"The alignment in the Lynhurst area was largely dictated by the location of the external control, a mid-block location in Lynhurst to minimize right-of-way taking and the necessity of making a proper diagonal crossing of Washington Street."¹² The external control point for Interstate 70 at Interstate 465 was to be near the mid-point between the interchanges of US 36 and US 40 (Washington Street) on Interstate 465. Consideration was given to a location between the Pennsylvania Railroad and Washington Street in the Lynhurst area; however, the alignment was indirect, caused almost the same amount of damage to existing development, and created interchange location problems on Interstate 465.

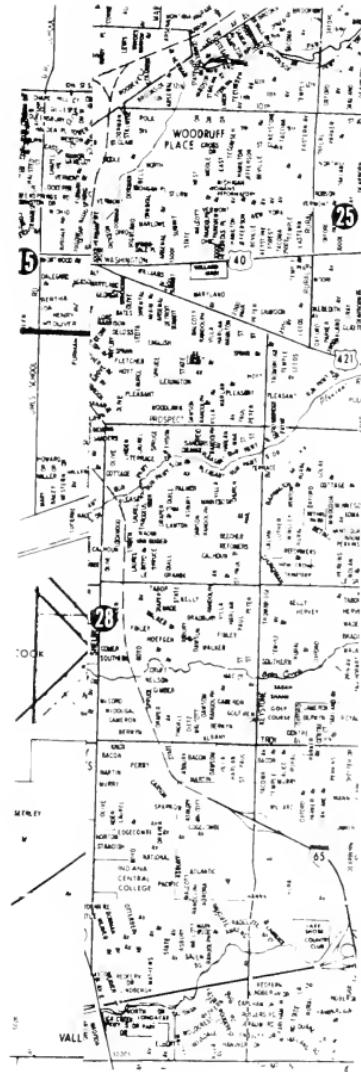


FIGURE 49. INTERST.



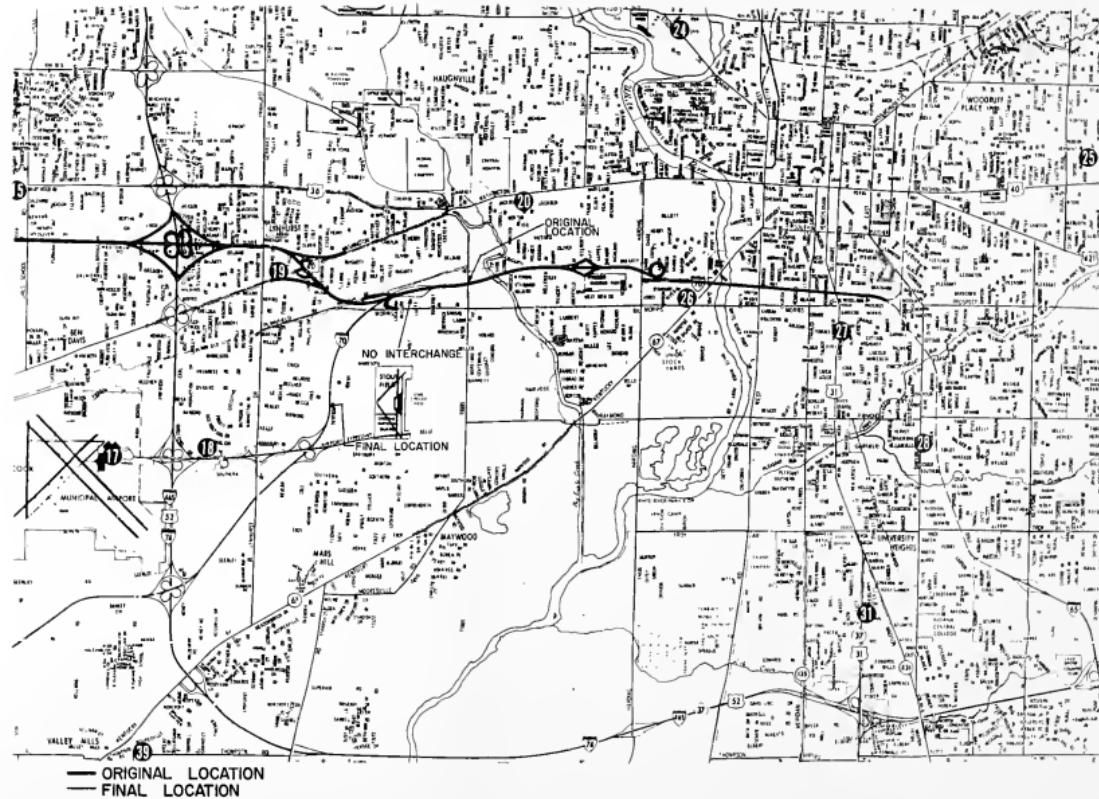


FIGURE 49. INTERSTATE 70—WEST ROUTE: ORIGINAL LOCATION



Alternative locations joining the north distributor leg of the Inner Belt were considered as shown in Figure 50 (p. 425). Although such alternatives would decrease the travel distance for through traffic on Interstate 70, the north distributor leg lacked the capacity to accommodate the through and terminating traffic for both Interstate 70 and Interstate 65. The location of these alternatives through the University Quarter was also considered difficult and costly.

In regard to the vertical alignment of the West Route, the decision to elevate or depress the facility was based primarily on drainage considerations. The high ground water table and a history of flooded streets necessitated an elevated route where streets and rail facilities were to be separated. Between the grade separations, the vertical alignment was to be carried as close to the natural ground line as drainage and Interstate alignment standards would permit. Due to the proximity of the south distributor leg of the Inner Belt to the White River, the south leg of the Inner Belt was to be elevated.

In 1950, the location of the West Route had to be drastically revised to the west of Holt Avenue. This revision of the West Route was occasioned by the relocation of Interstate 70 between Interstate 465 and Terre Haute from north to south of US 40 that shifted the control point for the West Route at Interstate 465 south for 2.6 miles.

As illustrated in Figure 51 (p. 426), several location alternatives were considered between the new control points at Interstate 465 and Holt Avenue. The most direct alignment diagonally bisected the Drexel Gardens; however, the benefit to the highway user were offset by adverse impacts on existing development as reflected in high right-of-way costs.



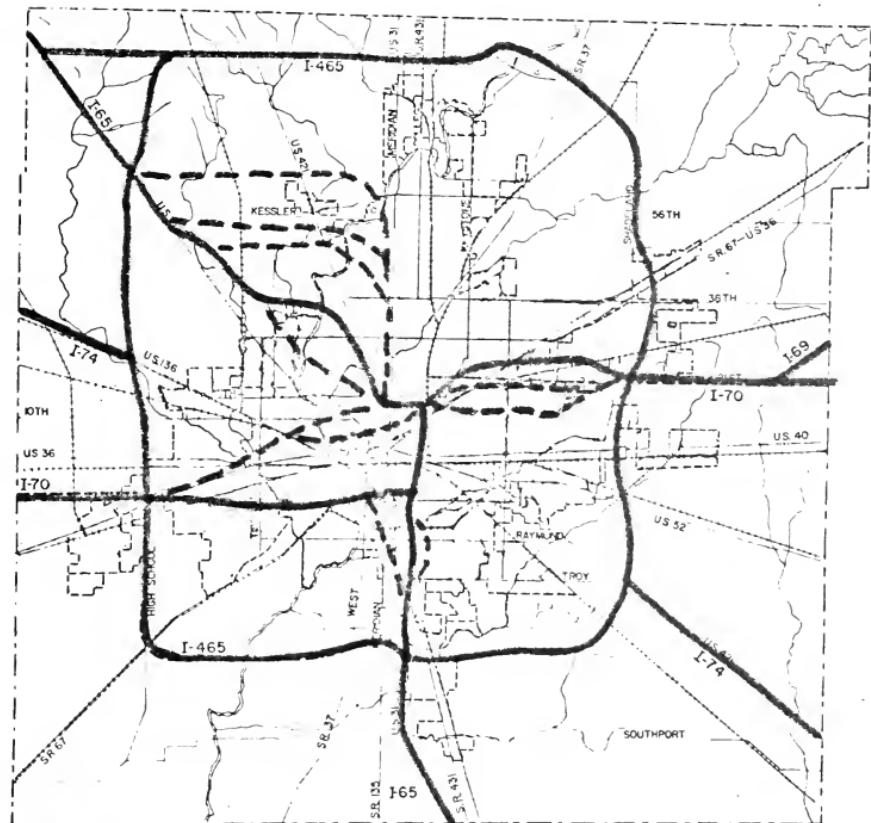
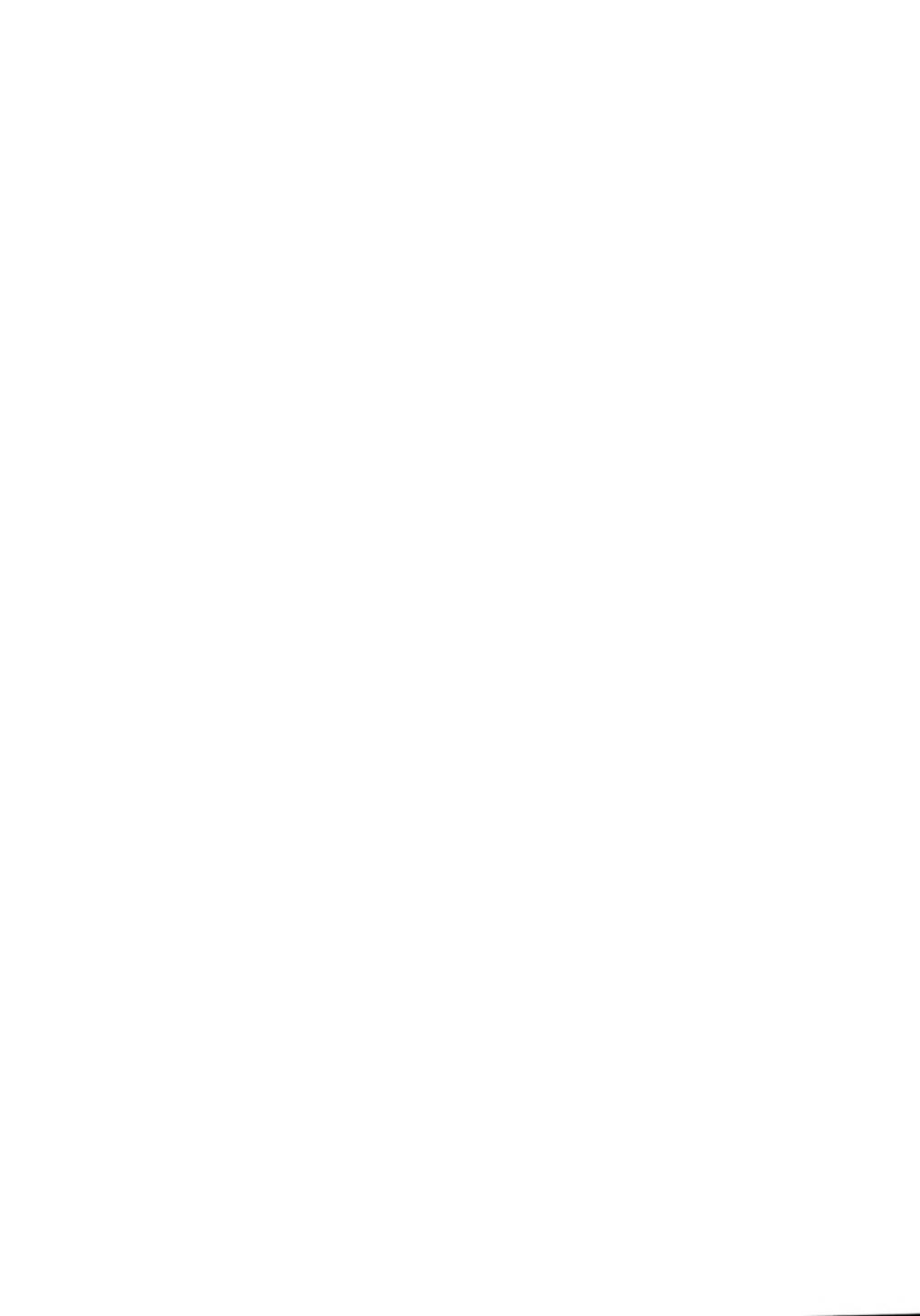
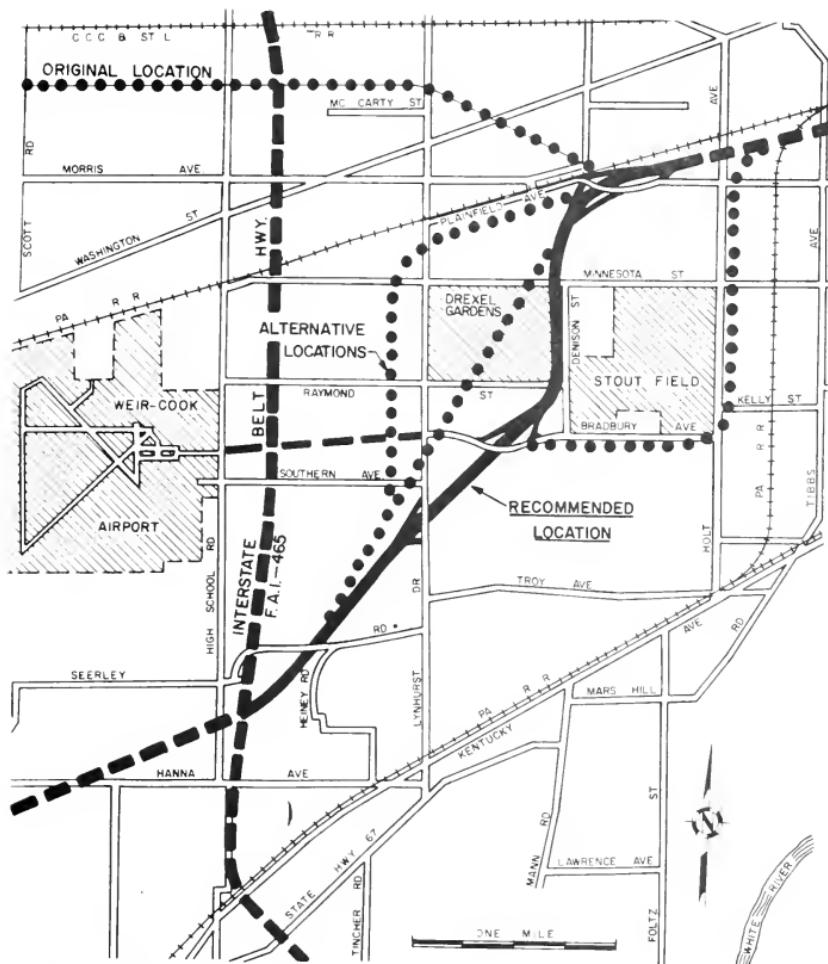


FIGURE 50. ALTERNATIVE LOCATIONS FOR INTERSTATE ROUTES INSIDE INTERSTATE 465¹³





RECOMMENDED LOCATION (REVISED LOCATION)

FIGURE 5I. INTERSTATE 70 — WEST ROUTE : REVISED LOCATION AND ALTERNATIVES¹⁴



The alternative west of Drexel Gardens or east of Stout Field resulted in considerable indirection in travel although the disruptive effect on existing development was minimized. The consultant felt an alignment to the east of the subdivision through the western portion of Stout Field would provide a reasonably direct routing, but would eliminate the airport as a functioning facility. Consequently, the alignment that would minimize both user and community costs had to pass through Drexel Gardens.

The recommended alternative passed through the eastern portion of Drexel Gardens parallel and to the west of Denison Street. This location would not hamper the present operations of Stout Field, but would severly restrict any northward expansion. As the western half of the Stout Field was being developed for industry by the Pennsylvania Railroad Company, the future expansion of Stout Field was already limited. The recommended location passes through a low lying area subject to flooding, and construction was to be at grade.

In August of 1959, the development of a Pennsylvania Railroad Spur to Stout Field resulted in the shift of the alignment to the east of Morris Street and the spur by means of a more generous curve than previously recommended. Revisions in the location of interchanges on the West Route were to occur later but the recommended relocation would not change.

South Route. Initially, two general locations were considered for the South Route between the Inner Belt and Interstate 465: one connected the west end of the south distributor leg of the Inner Belt and the other connected the Inner Belt at the junction of the south and east distributor legs. The first alternative was discarded because of the indirection to Interstate travel around the Inner Belt to the Northwest Route and the concentration of through and terminating traffic for both Interstate 65 and Interstate 70



on the south leg of the Inner Belt. The second alternative provided the most direct route around the Inner Belt and distributed the traffic load more evenly on the Inner Belt. As a result the general corridor for the South Route was reduced to a study area between the southeast corner of the Inner Belt and the external control point at US 31 on Interstate 465. A direct alignment was complicated by major industrial development along the Indianapolis Union Railroad west of New Street and by Garfield Park.

The high values of industrial development eliminated the possibility of an economical location west of New Street; and one studied location followed the alignment of New Street, thus severing Garfield Park. An alternative location to the east of Garfield Park was considered, but the necessary curve geometry increased user costs and caused considerable damage to residential development.

To avoid industrial development south of Troy Avenue (to the east of the Pennsylvania Railroad) and commercial development along Madison Avenue, the alignment gradually shifted to the east of East Avenue. According to the July 1957 location report, the recommended location extended south between Wright and Leonard Streets; crossed Pleasant Run between New and Napoleon Streets; severed Garfield Park to the east of East Garfield Drive; angled southwest at Southern Avenue, crossing the Pennsylvania Railroad near Berwyn Street; continued southward along Stanley Avenue crossing Madison Avenue one block south of Summer Street; and paralleled the east side of East Avenue to Interstate 465.

The vertical alignment of the South Route was at grade south of Pleasant Run, elevated in the Pleasant Run area, and depressed north of Pleasant Run through the east distributor leg of the Inner Belt.



In 1958, the consultant met with the Indiana State Highway Department to reconsider the external control point for the South Route of Interstate 65 on Interstate 465. The Indiana State Highway Department felt the originally recommended location should be revised because the location severed Garfield Park, destroyed several expensive residences in the vicinity of Garfield Park, necessitated an expensive high-level crossing of Pleasant Run, and isolated property between the route and the Pennsylvania Railroad south of Troy Avenue.

The external control point was shifted east to the vicinity of State Street; however, the northerly projection of the route would have caused heavy damage and disruption to Indiana Central College. [Refer to Figure 52, p. 430]. Consequently, the external control point was shifted farther east on Interstate 465 to the vicinity of the Lake Shore Country Club.

Using the new external control point on Interstate 465 and the internal control point at the southeast corner of the Inner Belt, new alternative locations were developed for the south route as shown in Figure 53, p. 431. The alternatives were developed through various combinations of north-south and diagonal sections. Because diagonals were generally more destructive to development, they were used most to the south where property was less densely developed.

Of the two alternatives south of Troy Avenue, the eastern location was preferred because of superior compatibility with the existing street system. Because of intense development north of Troy Avenue, an alignment parallel to a north-south street was considered least destructive. To the west of Shelby Street, any location would have severed Garfield Park. On the other hand, as the location was shifted farther east of Shelby Street, the diagonal length to the southeast corner of the Inner Belt increased and caused greater destruction to existing development. Consequently, the



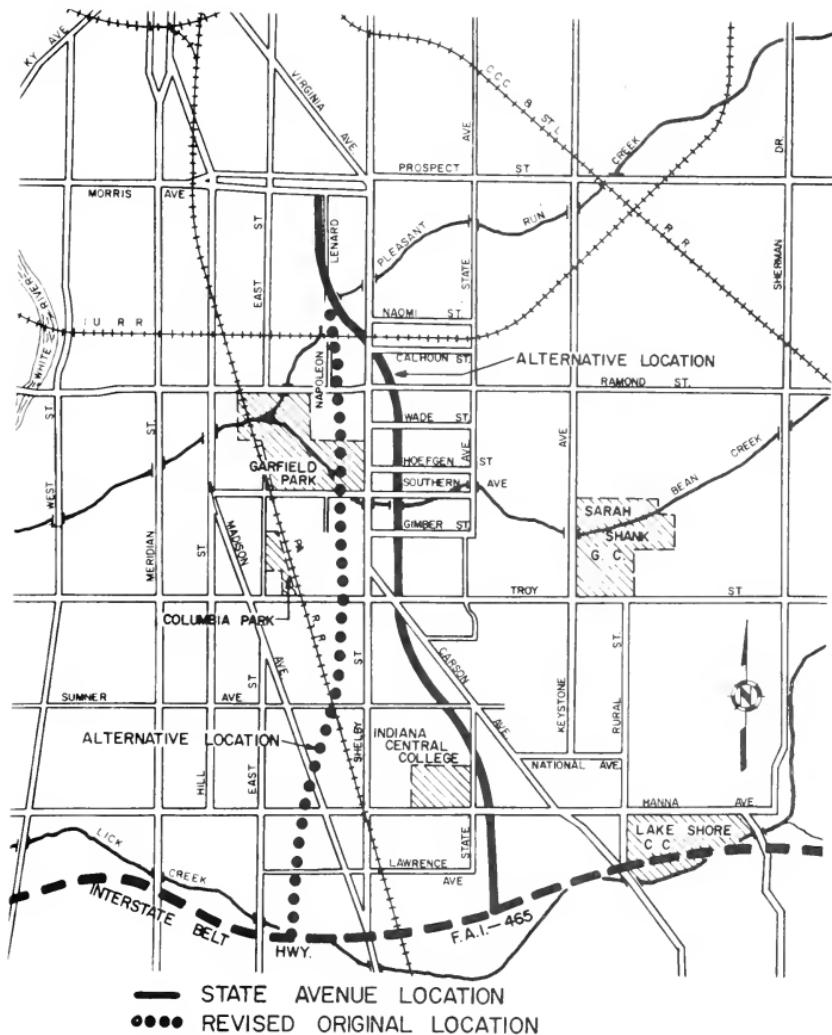


FIGURE 52. INTERSTATE 65 — SOUTH ROUTE: REVISED AND STATE AVENUE LOCATIONS¹⁵



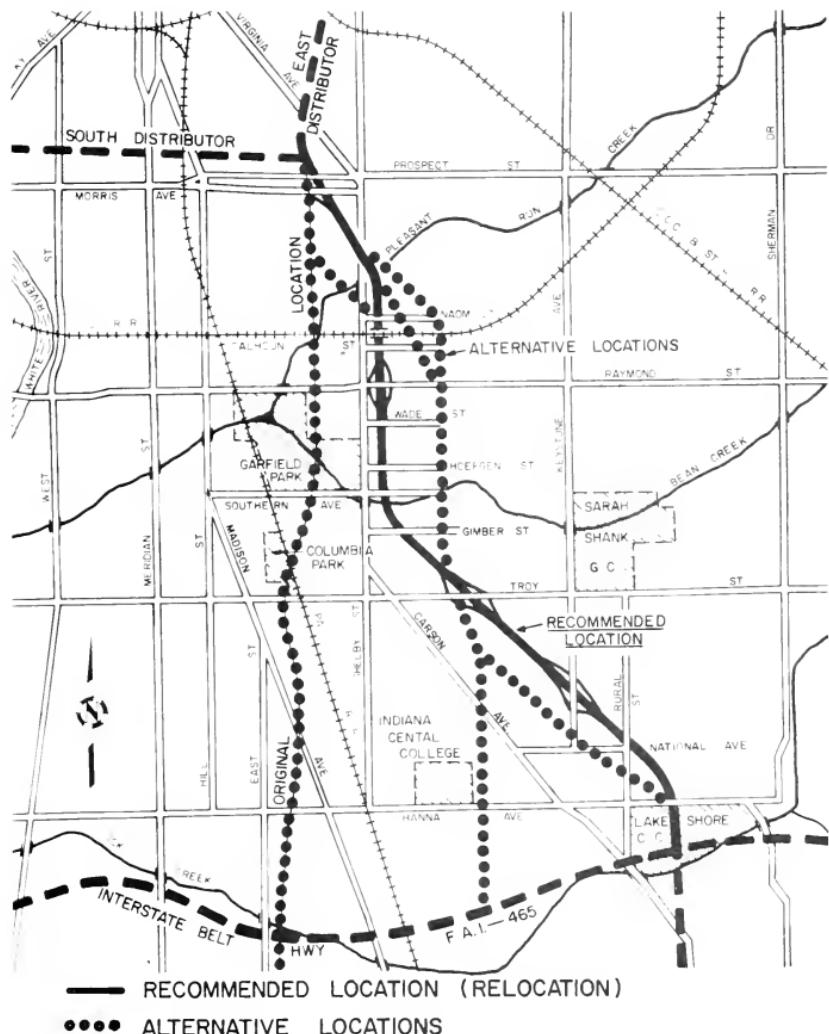


FIGURE 53. INTERSTATE 65 — SOUTH ROUTE:
RELOCATION AND ALTERNATIVES¹⁶

preferable alternative was a location near Shelby Street which avoided industrial development along the Indianapolis Union Railroad. The approach to the southeast corner of the Inner Belt and the crossing of Pleasant Run were primary considerations in locating the route north of the railroad.

The recommended location for the South Route of Interstate 65 in 1958 began at the junction with Interstate 465 in the Lake Shore Country Club property; continued north undercrossing Hanna Avenue; angled northwest undercrossing Rural Street north of National Avenue, Keystone Avenue near the alignment of Sumner Avenue, and Troy Street near Tindall Avenue; turned north at Gimber Street to parallel Shelby Street 600 feet to the east; and angled northwest to the Inner Belt at Pleasant Run Creek. The route was to be at grade south of Bean Creek and depressed north of Bean Creek through the east distributor leg except for the crossing of Pleasant Run Creek. Although the revised location was 0.3 mile longer than the original location, the revised location was estimated to cost \$1,845,000 less than the original location (\$25,285,000 as compared to \$27,130,000). Since right-of-way cost (\$14,807,000 for the revised location as compared to \$15,954,000 for the original location) accounted for the major difference in overall cost of the locations, the revised location was slightly less disruptive to existing development and took better advantage of undeveloped land. The revised alignment did not change at a later date, but some revisions in the design of the interchanges did occur.

East Route. The logical internal control point for the East Route of Interstate 70 was the northeast corner of the Inner Belt because such a junction would distribute traffic more evenly over the Inner Belt. The study corridor was centered on a straight line between the internal control point on the Inner Belt and the external control point near 21st Street on Interstate 465.

Two basic route alternatives were developed. [Refer to Figure 54 , p. 434]. The southern route extended due east from the northeast corner of the Inner Belt; continued east along the southern extremity of Brookside Park; angled northeast at Sherman Drive; and followed the New York Central tracks on the south to the west of Shadeland Avenue where the location angled southwest to join Interstate 465. The northern location considered extended northeast from the Inner Belt generally parallel and two blocks northwest of Massachusetts Avenue; angled east at Pural Avenue and 22nd Street to cross Massachusetts Avenue at Adams Street; and paralleled the New York Central tracks two blocks to the north and to west of Shadeland Avenue where the location joined the first alternative.

The northern route was recommended because it passed through generally vacant land east of Sherman Drive. The more southerly location traversed the industrial area along the east side of Sherman Drive, caused considerable damage to residential areas east of Sherman Drive, and isolated part of the residential area between the route and the New York Central Railroad. The recommended location was to be depressed from the Inner Belt to Massachusetts Avenue and to be at grade from Massachusetts Avenue to Interstate 465. Revisions in the location of interchanges were to occur later, but the recommended location did not change.

Northwest Route. The west end of the north distributor leg of the Inner Belt was the logical connection for the Northwest Route of Interstate 65. Since the majority of the population was located to the north of the central area, the Indiana State Highway Department felt that the Northwest Route should be shifted northeast from a direct alignment to serve the area, provided the shift did not materially increase the cost of the route and the travel time for through traffic. As shown in Figure 50 (p. 425), several northerly

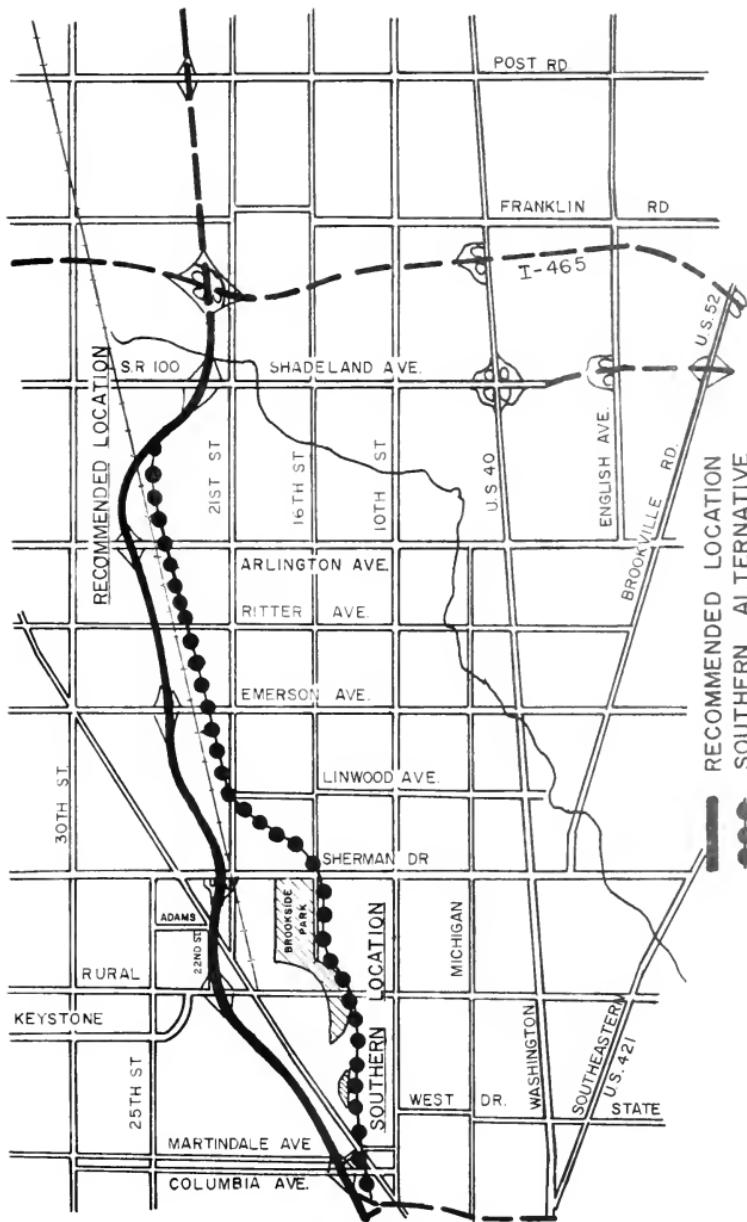


FIGURE 54. INTERSTATE 70—EAST ROUTE: RECOMMENDED LOCATION



alternatives were studied; however, most of the alternatives significantly increased the cost of the system as they passed through Indianapolis's finest residential properties and/or added considerably to the travel time.¹⁷

A compromise location was ultimately developed that provided partial access to the northwest-north central area at reasonable overall cost without adding significantly to the through traffic travel time. In the comparison of the compromise location with the most practical direct alignment between the control points, Lochner found that an eight percent increase in the initial investment and a five percent increase in travel time for the compromise route provided service to seventy percent more traffic in terms of vehicle-miles.

The recommended route (the compromise route) proceeded due north from the west end of the north distributor leg between Senate Avenue and Lafayette Street; curved northwest at 18th Street; continued north between Paris and Shriver Avenues; curved west at 29th Street to cross North-western Avenue near Congress Avenue; angled northwest to cross the White River near 36th Street; turned west at 38th Street; curved northwest at Guion Road to parallel Lafayette Road approximately 1200 feet to the east; crosses over Lafayette Road near 46th Street; and resumed an alignment parallel to Lafayette Road on the west until Interstate 465 was joined. The alignment between the north distributor leg and 18th Street was later shifted three blocks to the west.

The Northwest Route was to be depressed from the northeast corner of the Inner Belt to the White River except for the crossing of Fall Creek; west of White River the facility was to be at grade.

In 1959, the Bureau of Public Roads objected to the routing of 38th Street local traffic on the Interstate with through traffic. The proposed design was further complicated by the interchange with Kessler Boulevard, which necessitated



ramp movements near the 38th Street merging movements. It was felt that 38th Street would have to be developed as a separate facility (with access to the Interstate via ramps) to separate local and through traffic movements.

Two alternatives were considered: (1)the relocation of the Interstate to the south and the development of 38th Street as a major thoroughfare, with interchanges at each facility for Kessler Boulevard or (2) the development of 38th Street as a collector-distributor parallel to the Interstate, with Kessler Boulevard interchange ramps connected to the 38th Street collector-distributor. The latter alternative, with common right-of-way, was recommended from the standpoint of capital cost, user service and accessibility, and community impact.

Additions and Alternatives to the Recommended Inner City Interstate Freeway System. As set forth in Lochner's location study in July of 1957, the initially recommended Interstate System in Indianapolis appears in Figures 55 and 56 pages 437 and 438. After revisions in the initially recommended locations by Lochner in 1959, the locations for the Indianapolis Interstates were finalized as shown in Figure 57 , p. 439. Since the Interstate System was not intended to solve congestion problems of urban areas in general, the basic Interstate System in Indianapolis would not solve all the congestion problems of the city.

Because additional highway improvements were necessary, the Indianapolis Metropolitan Area supported two major transportation studies that recommended improvements supplementing the basic Interstate freeway system : Highway Transportation for the Indianapolis Metropolitan Area by Barton and Associates in August of 1957 and Indianapolis Regional Transportation and Development Study (IRTADS) by Barton-Aschman Associates, Inc. in October of 1968.

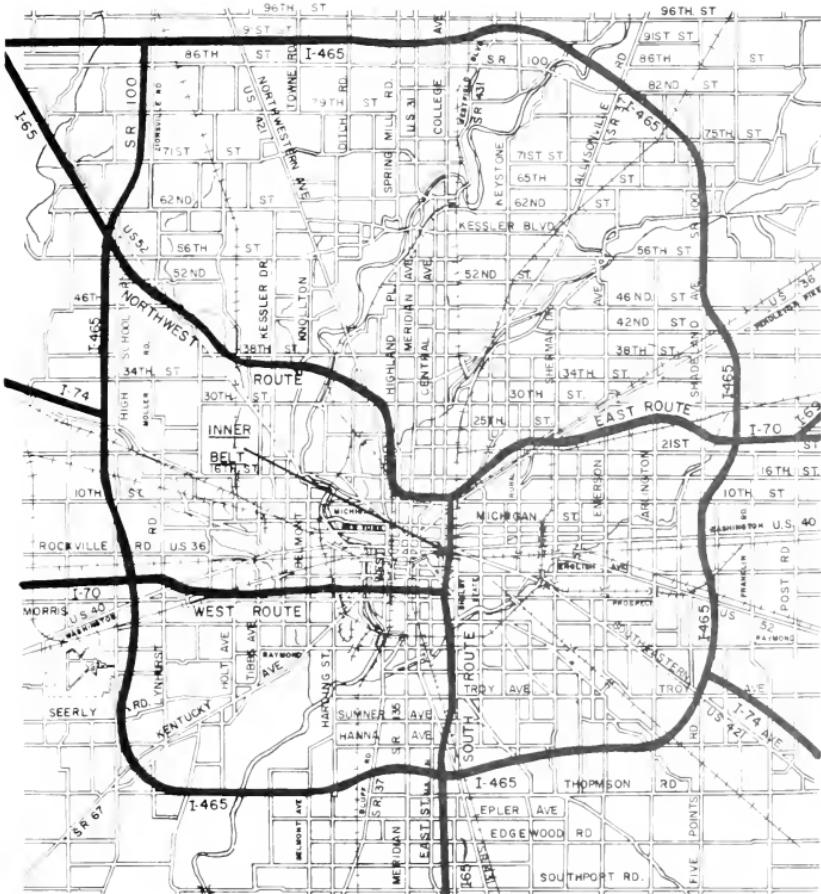


FIGURE 55. INDIANAPOLIS INTERSTATE HIGHWAY SYSTEM PLAN OF 1957¹⁸

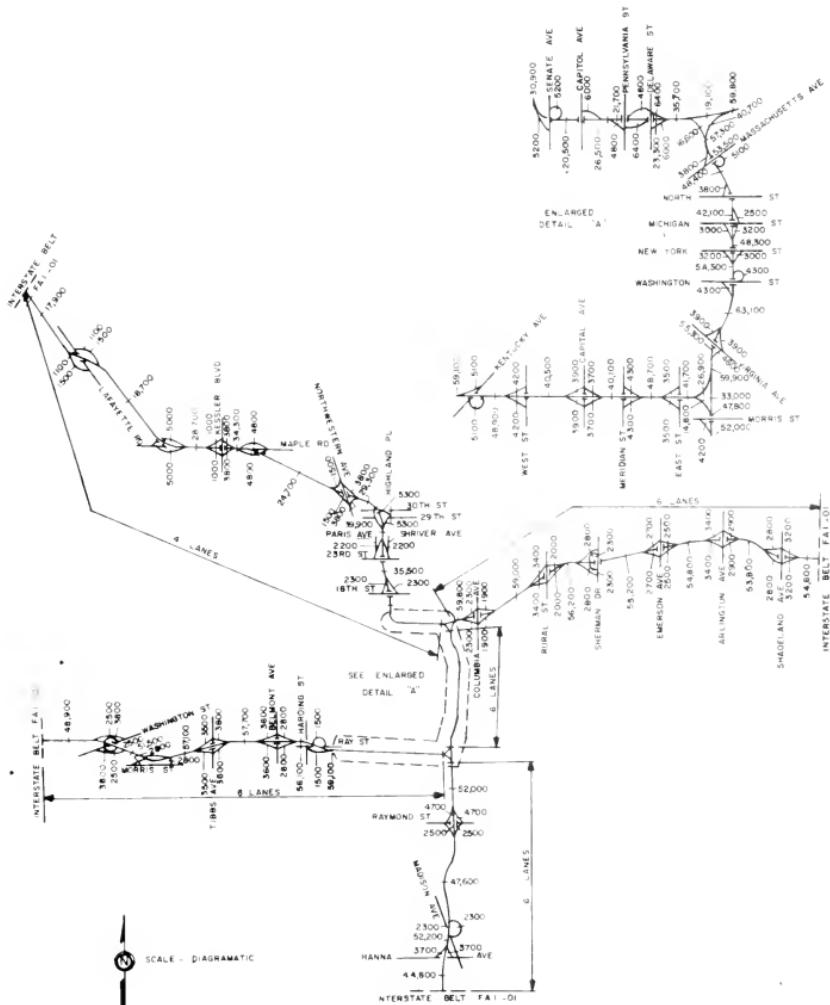


FIGURE 56. INDIANAPOLIS INTERSTATE HIGHWAY SYSTEM
PLAN OF 1957 — ANTICIPATED 1975
TRAFFIC VOLUMES¹⁹



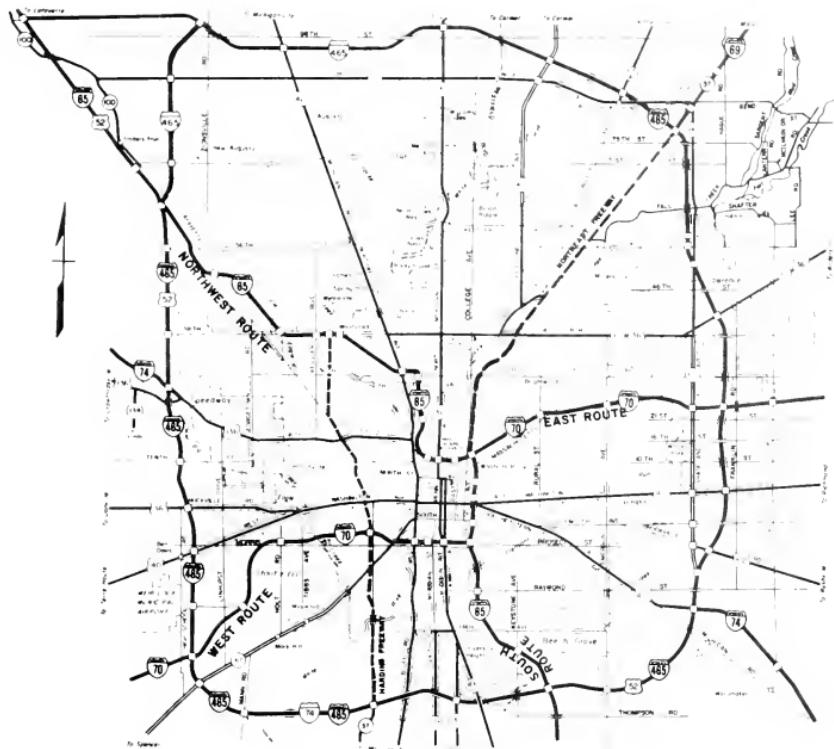


FIGURE 57. FINAL LOCATION OF THE INDIANAPOLIS
INTERSTATE FREEWAYS



The first study developed a CBD Circulation Plan and a Thoroughfare Plan for 1975. Figures 58 and 59 (pages 441 and 442) show these plans in the early 1960's. IRTADS updated these plans to the year 1985 as shown in Figures 60 and 61 (pages 443 and 444). Both studies recommended additional freeways to serve the metropolitan area; a few of these freeways were suggested as additions within the designated Interstate System. Several interest groups, who basically opposed the penetration of Interstate Routes into the central city, also suggested alternatives to the basic recommended Interstate freeway system.

North Freeway. Due to the fact that residential development expanded predominately northward in the urban area, the heaviest traffic movements extended northward from the central area to these residential areas. In a 1954 study, the Indiana State Highway Department had proposed a north-south freeway following Keystone Avenue, the Monon Railroad and East Street.

The Barton study of 1957 felt that such a freeway was necessary to divert traffic from north-south streets that cut through neighborhoods on the near north side, to preserve these neighborhoods, and to prevent the retardation of metropolitan growth in the north and northeast. Because the freeway could cost approximately \$45 million, Barton suggested that the freeway be designated an urban extension of an Interstate Route. Since Interstate 69 terminated at Interstate 70 east of Interstate 465 at that time, Barton recommended that Interstate 69 be modified to join Interstate 465 northeast of the urban area so that Interstate 69 could be extended to the Inner Belt (Refer to Figure 62 , p.445].

Northeast Freeway. When the southern terminus of Interstate 69 was shifted from Interstate 70 to Interstate 465 in 1962, a freeway to the north became a possibility. Consequently a northeast freeway was planned from the northeast

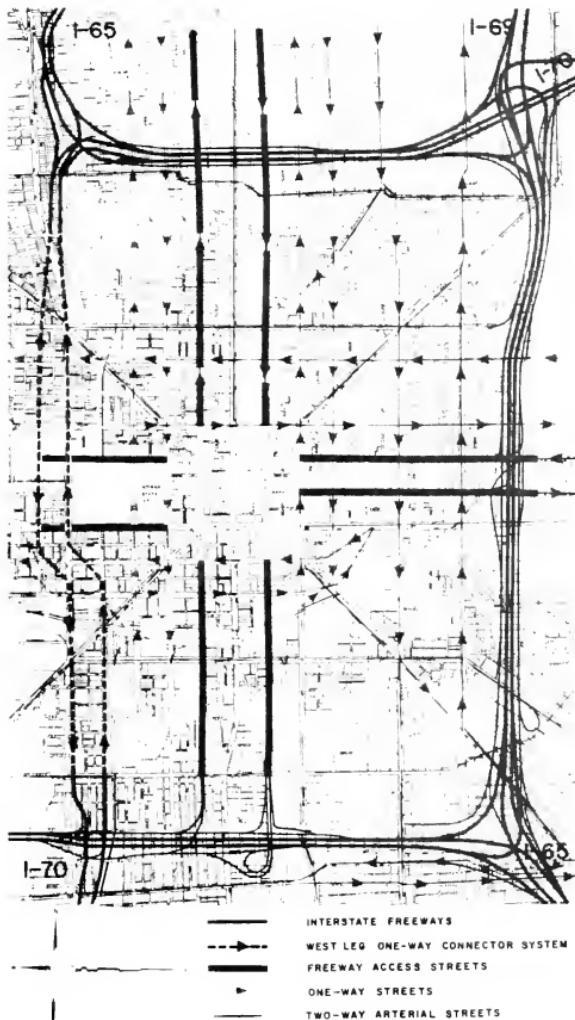


FIGURE 58. CENTRAL BUSINESS DISTRICT THOROUGHFARE PLAN OF 1963²⁰



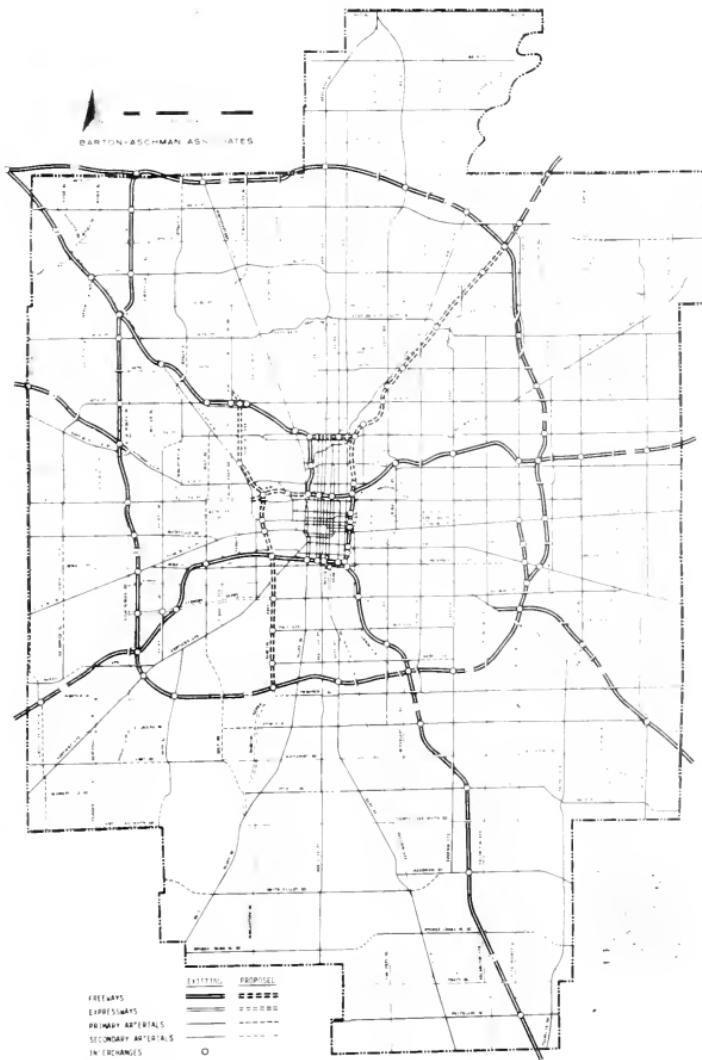


FIGURE 59. OFFICIAL THOROUGHFARE PLAN FOR MARION COUNTY IN 1962



FIGURE 6Q. RECOMMENDED PLAN IN 1969





NOTE: SUPPLEMENT FREEWAYS TO INTERSTATE FREEWAY SYSTEM
APPEAR ON THIS PLAN

FIGURE 6I. RECOMMENDED THOROUGHFARE PLAN FOR 1985²²



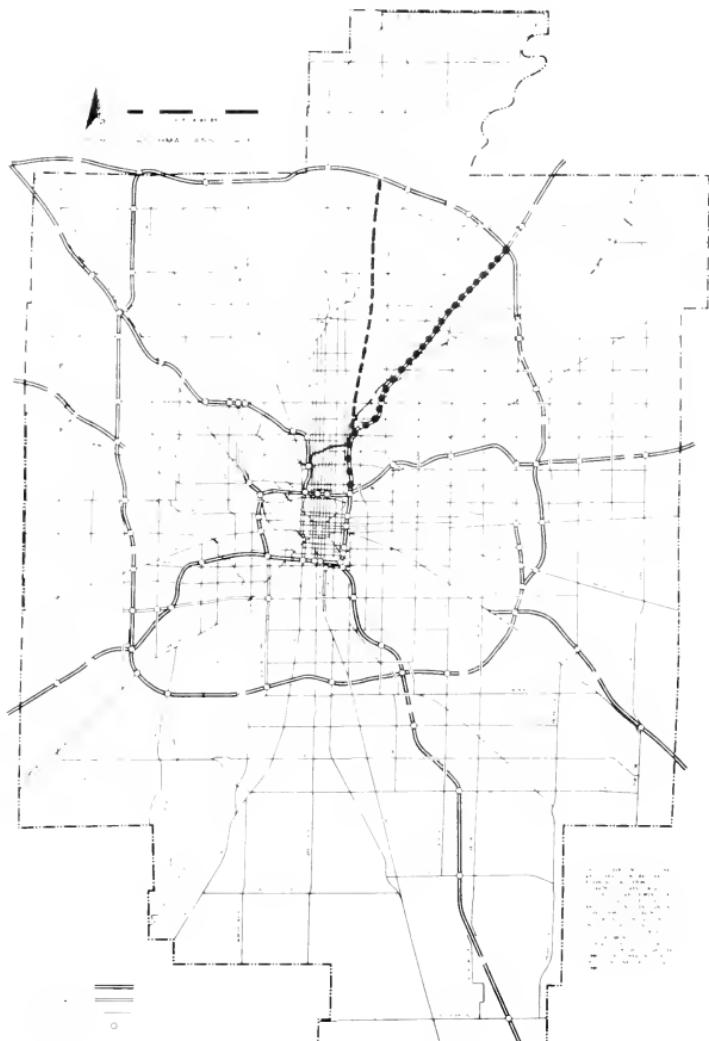


FIGURE 62. PROPOSED NORTH FREEWAY AND
NORTHEAST FREEWAY²³



corner of the Inner Belt along the Monon Railroad tracks and SR 37 to Interstate 465 serving the major direction of growth in Indianapolis. [Refer to Figure 62, p. 445].

IRTADS further documented the need for a northeast freeway and included the freeway in the Thoroughfare Plan for 1985. The Northeast Freeway was felt needed to relieve the eventual overloading of the East Route of Interstate 70, the East Leg of Interstate 465, and the arterials in the Meridian corridor and the Washington Street to 38th Street corridor.

In designing the Inner Belt, the northeast interchange was modified to accommodate the Northeast Freeway. Since the Northeast Freeway was a logical extension of Interstate 69, the Indiana State Highway Commission recommended that the Northeast Freeway be added to the Interstate System. When the route was not included in the Interstate System, the financing of the \$48.6 million freeway became a problem.

In 1971, Indianapolis requested a consultant study of the feasibility of financing the route by tolls. The mini-toll road feasibility study revealed that the tollway was not self-financing and that the tollway was marginally feasible if operation and maintenance expenses or twenty-five percent of capital cost was financed from sources other than tolls. Furthermore, the tollway would only be self-sufficient if there was a fifty percent increase in traffic.

The Indiana State Highway Commission and the City of Indianapolis have supported plans for construction of the Northeast Freeway and the Indianapolis Freeway System design was revised to accommodate the proposed Northeast Freeway.

Modified Plan. Opponents to the location of the Northwest Route of Interstate 65, the most vocal being Livable Indianapolis For Everyone, Inc. (LIFE) and the Indianapolis Taxpayers Association, suggested an alternative route for

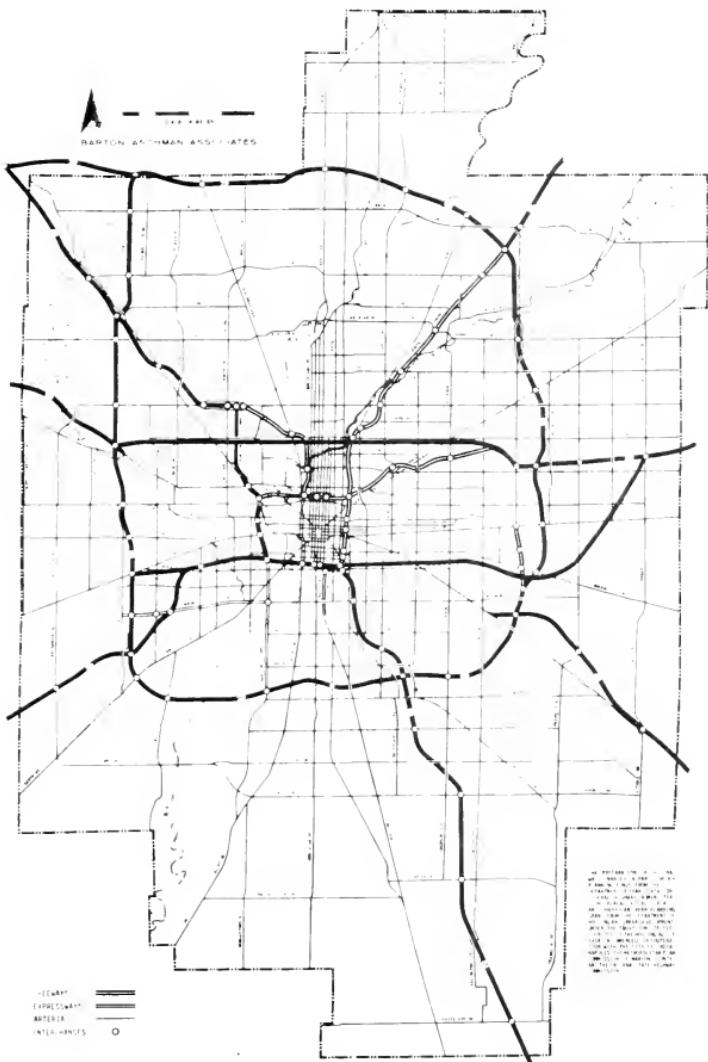


Interstate 65 in a general corridor west of the White River [Refer to Figure 63 , p.448]. This alternate location, known as the Modified Plan, was also considered by the Indiana State Highway Department for proposed SR 37. The alternate location began at West 38th Street heading due south on the west side of Cold Springs Road, crossed Cold Springs Road near 19th Street cutting through Municipal Gardens Park and Community Center, continued along the west side of the White River through Belmont Park, and turned east to rejoin the north leg of the Inner Belt near 12th and West Streets.

The proponents of the Modified Plan felt the planned location for the Northwest Route was excessively destructive to existing development and to the White River Valley. The alternative, suggested by the Modified Plan, would not sever neighborhoods and would destroy one-fifth as many homes. The Modified Plan would also require less park land than the presently planned location. Although the Modified Plan would disrupt the heavily used community facilities at Municipal Gardens and Belmont Park, the Modified Plan proponents felt that these facilities were replaceable and that the natural amenities of the White River Valley which would be destroyed by the planned location were not replaceable.

Livable Indianapolis for Everyone, Inc. and the Indianapolis Taxpayers Association also opposed any penetration of Interstate Routes into the central city. Beside the proposed relocation of the Northwest Route of Interstate 65 to the proposed location of SR 37, the opponents suggested the elimination of the Inner Belt and the Northeast Freeway and the relocation of the East Route of Interstate 70 along Prospect Street south of the Hawthorne Railroad Yards as shown in Figure 63 , p.448 . The Indiana State Highway Commission noted that these drastic modifications to the Indianapolis Interstate Freeway System would eliminate





NOTE: The Harding Expressway was the modified plan

FIGURE 63. THE PROPOSALS OF LIVABLE INDIANAPOLIS FOR EVERYONE AND THE INDIANAPOLIS TAXPAYERS ASSOCIATION



service to the north and northeast portion of the urban area, restrict service to the CBD, and destroy the concept of cross-town freeways.

The relocation of the Northwest Route for Interstate 65 along the proposed location of SR 37 would not adequately serve CBD traffic nor relieve the arterials in the north central area between 11th and 38th Streets. To reach the CBD from the relocated Northwest Route, traffic would have to travel on one and one-half miles of congested and inadequate surface streets and cross White River over existing bridges, some of which were obsolete and all of which were congested. A single route to carry both the traffic of Interstate 65 and SR 37 would be very expensive and inefficient because the facility would require ten lanes to serve the estimated combined traffic load of 140,000 vehicles per day.

As Interstate 70 was the only Interstate which traversed the urban area in the alternative system proposed, the only freeway that remained in close proximity to the downtown area was the south leg of the Inner Belt which was an integral part of retained Interstate 70. With access to the CBD only through the interchange on the south leg of the Inner Belt, the south leg and the local circulation system would be inadequate to handle the traffic loading; such a condition would merely compound the congestion problems in the central city.

Summarizing all these disadvantages, the Indiana State Highway Commission stated that "such an unbalanced plan would severly restrict the benefits that Indianapolis would derive from the Interstate System."²⁴

Interstate Type West Leg for the Inner Belt. Although a west leg of the Inner Belt built to Interstate standards was considered infeasible east of White River, proposed expansion of the university complex in the downtown area in



1966 led to an investigation of an Interstate type West Leg for the Inner Belt west of White River. Because of the heavy loading of the one-way pair that served as the West Leg of the Inner Belt, maximum interplay between the expanded university complex and the central area functions was felt to be endangered. Consequently, Victor Gruen Associates was employed by Indianapolis to develop a plan for the expanded university.

Since the freeway system serving the central area was a major determinant in developing the university complex, Gruen investigated alternatives to the proposed freeway location in the central area. Gruen suggested that the Inner Belt be closed by extending the north leg of the Inner Belt to the west to connect with a new location of the Northwest Route along the alignment of proposed SR 37 from Interstate 65 near 38th Street and Kessler Boulevard and extended south to Interstate 70 near Morris and Harding Streets [Refer to Figure 64 , p. 451]. This proposal had some aspects of the Modified Plan proposed by Livable Indianapolis for Everyone, Inc.

The proposed Inner Belt using a one-way pair of arterials for the west leg has several deficiencies which were recognized by the Indiana State Highway Commission and reiterated by Gruen. The fact that the Inner Belt had only three Interstate standard legs resulted in an imbalance of traffic loads on it. All through traffic on Interstate 65 and 70 was combined on the east leg of the Inner Belt so that it carried volumes double those of the north or south leg.

Gruen further felt that the heavy traffic loads on the west leg one-way pair of arterials created a barrier which severely limited interaction between the university complex and the central area; furthermore, the utilization of the west leg one-way pair of arterials by through traffic with destinations outside the central area was considered



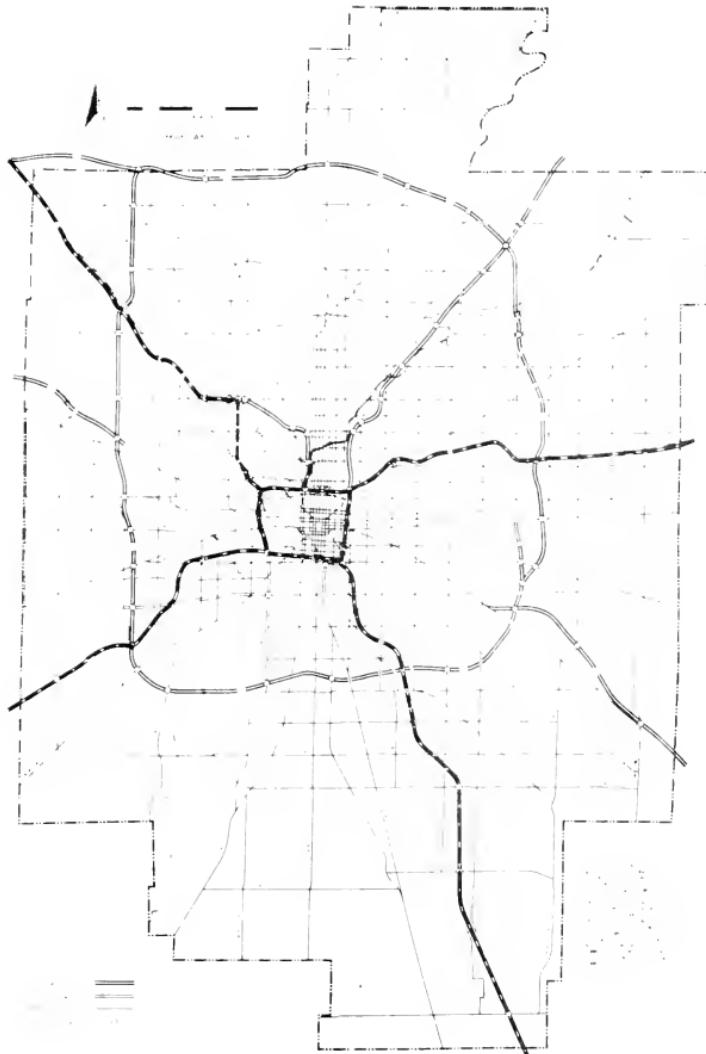


FIGURE 64. INTERSTATE TYPE WEST LEG FOR THE
INNER BELT ALONG THE PROPOSED
HARDING EXPRESSWAY²⁵

improper. Because the Northwest Route terminated at the west end of the north leg of the Inner Belt and the west leg one-way pair, an estimated one half of the traffic would continue on the west leg one-way pair, thus overloading the interchange with the west leg and the west leg itself.

Since the suggested location of the Northwest Route on the proposed alignment of SR 37 would complete the Inner Belt, there was more uniform traffic loading and more equal distribution of traffic on the Inner Belt. The more equal distribution of traffic would reduce the loading on the west leg one-way pair and eliminate the need for through traffic bound for the south and west industrial areas to traverse the central area. In addition, the reduction of traffic on the west leg one-way pair of arterials provided good flexibility for central area development.

As an alternative to relocating the Northwest Route along the proposed alignment of SR 37, Gruen suggested that the north leg of the Inner Belt be extended southwest across the university complex to SR 37 near Washington Street and that SR 37 be built to Interstate standards between Washington Street and Interstate 70 as shown in Figure 65 , p. 453 . This second alternative would also provide an Interstate level west leg for the Inner Belt balancing the traffic load on the Inner Belt. Gruen suggested the diagonal route through the campus could be built with little disruption to campus activity.

Supplemental Freeways. In developing the future highway network, the consultants for IRTADS studied three alternatives to the proposed Interstate freeway system in the central city. [Refer to Figures 66 to 69, pgs. 454 to 457]. Alternative one was the latter proposal noted above of Victor Gruen and Associates - the diagonal extension of the north leg of the Inner Belt to the west to join SR 37, forming an Interstate type west leg. The second alternative was also

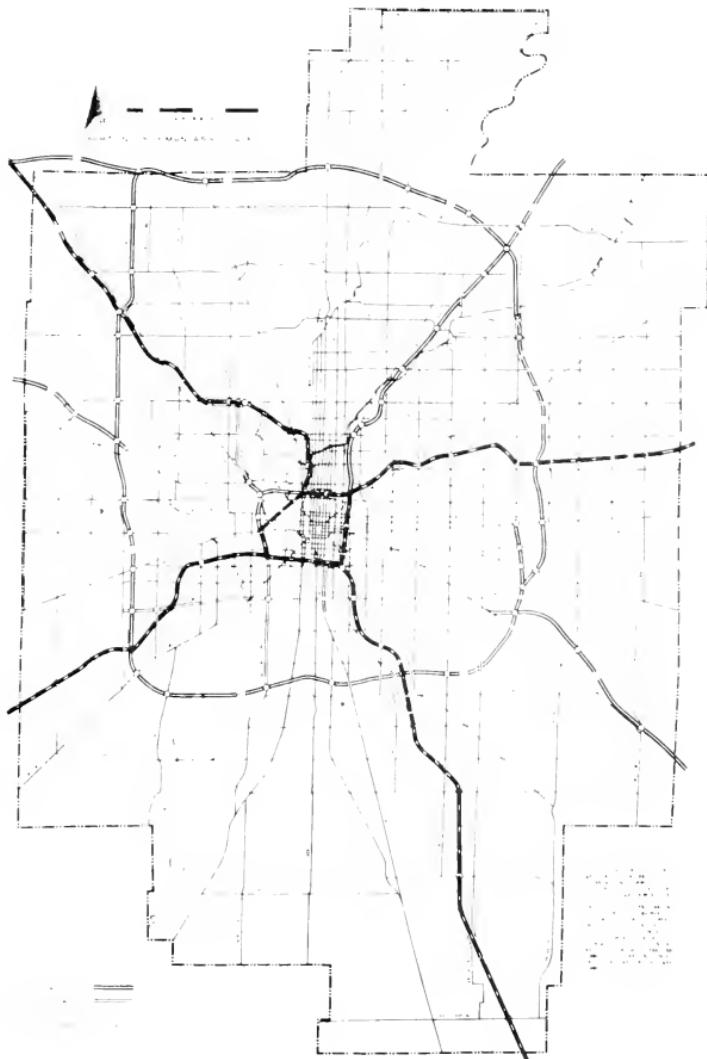


FIGURE 65. INTERSTATE TYPE WEST LEG FOR THE
INNER BELT THROUGH THE UNIVERSITY
COMPLEX²⁶

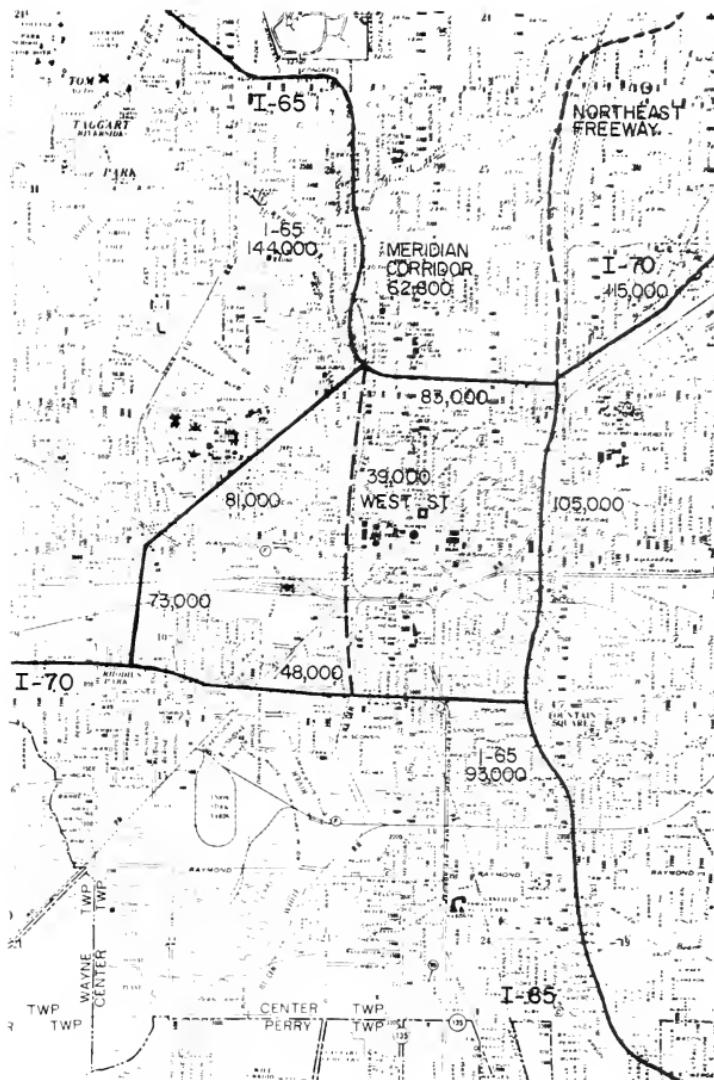


FIGURE 66. SUPPLEMENTAL FREEWAYS FOR CENTRAL CITY:
ALTERNATIVE 1 - ROUTE THROUGH UNIVERSITY
COMPLEX²⁷

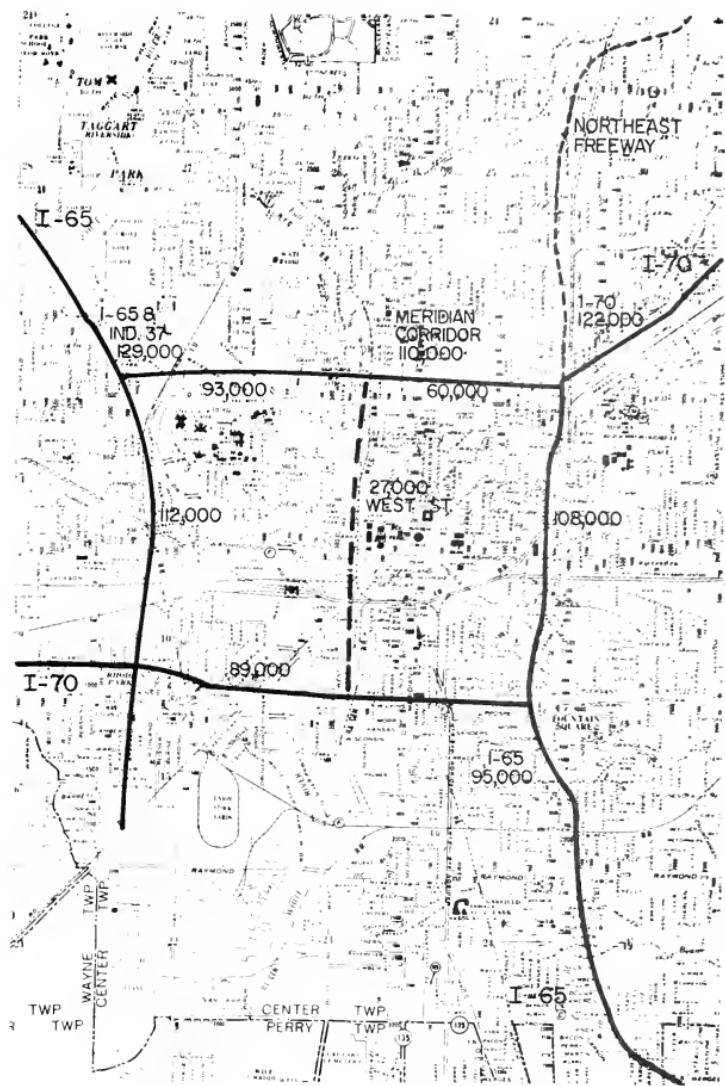


FIGURE 67. SUPPLEMENTAL FREEWAYS FOR CENTRAL CITY:
ALTERNATIVE 2 - MODIFIED PLAN²⁸

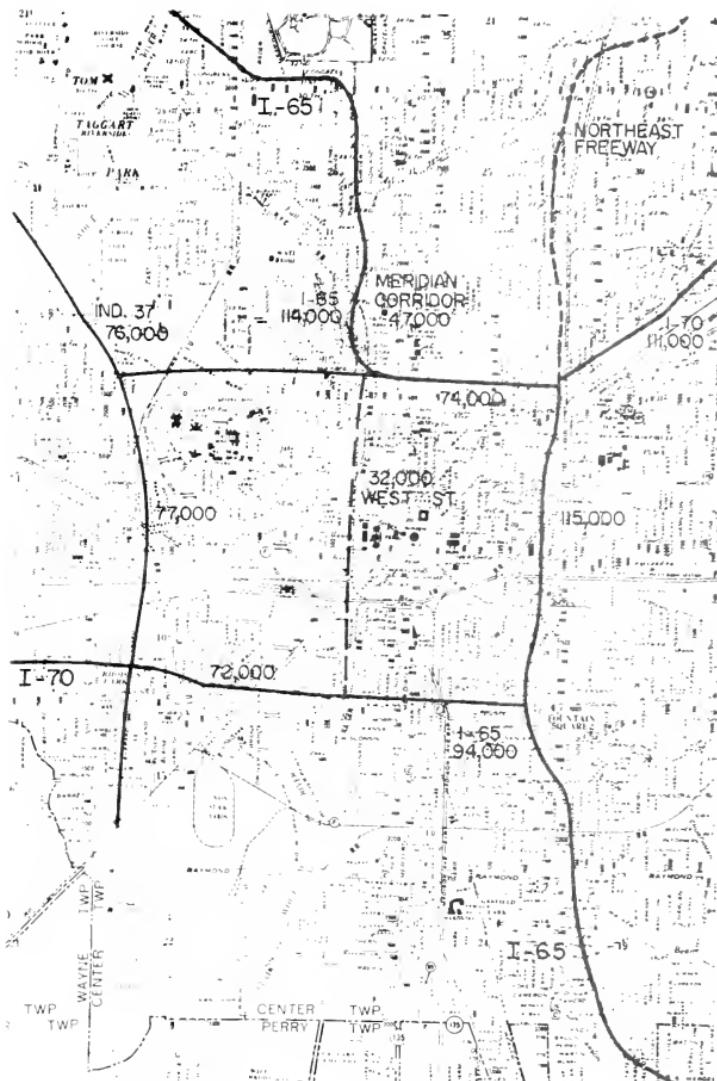


FIGURE 68. SUPPLEMENTAL FREEWAYS FOR CENTRAL CITY:
ALTERNATIVE 3 - PROPOSED SR 37²⁹

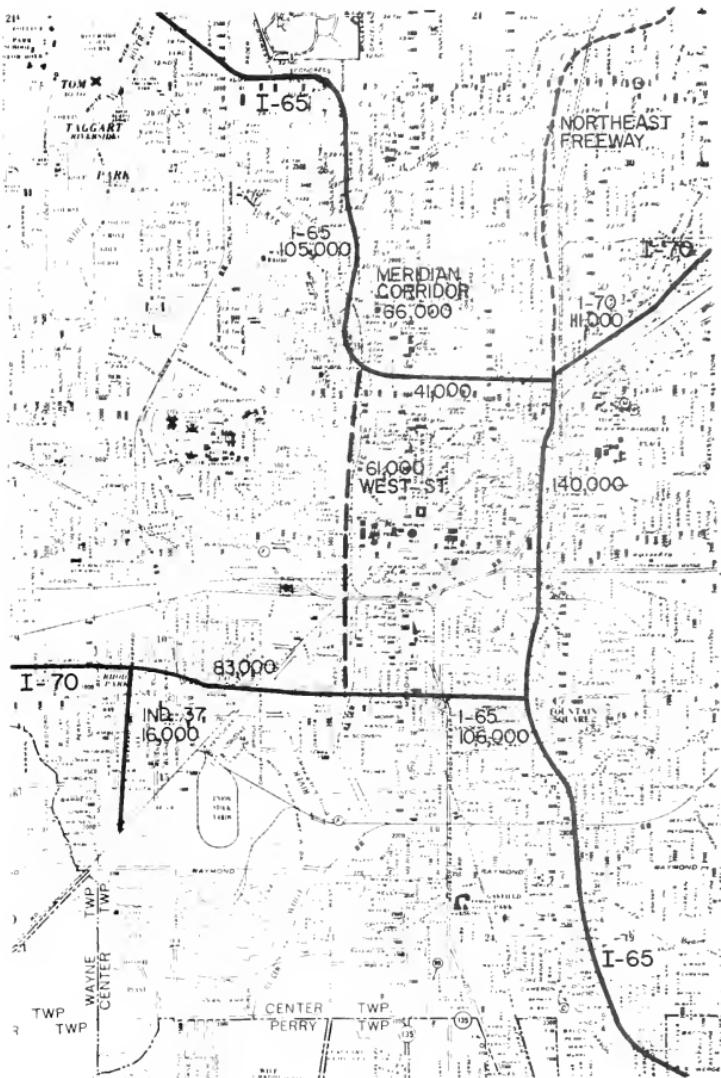


FIGURE 69. SUPPLEMENTAL FREEWAYS FOR CENTRAL CITY:
ALTERNATIVE 4 - PROPOSED INTERSTATE
FREEWAY SYSTEM³⁰

suggested by Gruen and opponents to the Northwest Route - the relocation of the Northwest Route along the proposed alignment of SR 37.

Alternative three included the present location of the Northwest Route, a freeway along the proposed alignment of SR 37, and the westward extension of the north leg to SR 37 to close the Inner Belt; this was the system that would exist if both Interstate 65 and SR 37 Expressway were built as planned. In comparing the alternatives, consideration was given to the relief of the one-way pair west leg arterials, relief of the Meridian corridor arterials and closure of the Inner Belt.

Having evaluated the alternatives, the IRTADS consultants recommended the third alternative. The Northwest Route of Interstate 65 was needed to relieve the arterials in the Meridian corridor in order to preserve the north central neighborhoods. The Modified Plan (Alternative 2) would provide the greatest relief for the west leg one-way pair and preserve the near northside neighborhoods from severance by Interstate 65; however, the plan would result in a 67 percent traffic increase in the Meridian corridor, overloading the existing arterials.

Consequently, the Northwest Route as planned, the extension of the north leg of the Inner Belt and the SR 37 freeway were all needed to relieve the west leg one-way pair, to divert traffic from the Meridian corridor and to assure balanced traffic loading of the Inner Belt. The west leg one-way pair was also retained to aid in the circulation and distribution of traffic in the CBD.

The planned Interstate System in the Indianapolis Metropolitan Area provided 120.5 miles of freeway. By 1985, an additional 21.5 miles of new freeway would be needed to serve the travel demands of the metropolitan areas according to IRTADS recommendations. Besides the Northeast Freeway

(9.1 miles), the 8.8 mile Harding Street Freeway (proposed SR 37 from Interstate 65 to Interstate 465), and the north leg Freeway Extension (1.9 miles) which would link the north leg of the Inner Belt to the Harding Street Freeway, IRTADS recommended a 30th Street Freeway (1.7 miles) which would link Interstate 65 and the Northeast Freeway. By 1985, heavy cross-town traffic in the 30th Street corridor would necessitate a facility of freeway level.

Design of the Inner City Interstate Freeway System. To insure compatibility of the Interstate design with the existing and proposed metropolitan area transportation network, the Thoroughfare Plans for 1975 and 1985 served as guidelines in the selection of interchanges, street separations, and street closures. The design features of the Interstate System were based on present and projected traffic volumes to assure adequate Interstate and local facilities for the movement of traffic. In all cases, features were incorporated into the final design after an extensive review by the Cooperative Highway Planning Committee of Marion County.

Depressed Versus Elevated. In locating the Indianapolis Interstate Routes in 1957, Lochner recommended the use of depressed facilities on the north and east leg of the Inner Belt, the Northwest Route from the Inner Belt to the White River, the East Route from the Inner Belt to Massachusetts Avenue, and the South Route from the Inner Belt to Fall Creek. The West Route could not be depressed due to ground water problems, but would be held near grade except at grade separations. The south leg of the Inner Belt would have to be elevated due to the proximity of the White River.

The consultant based his recommendations for vertical location on general economics of crossing over or crossing under the cross roads. The visual effect and the cost of utility adjustments were also considered. At the public

hearing on the east leg of the Inner Belt on February 16, 1960, Lochner stated that a depressed facility would be less expensive than an elevated facility (about one-third the cost of an elevated facility), comparing total improvement costs. Although the vertical locations of the routes were described at the public hearings, the major subject of the public hearings was the route alignment because the design features of the routes were still subject to possible change.

Extensive soil investigations were initiated in 1961 to determine the feasibility of depressing the routes as recommended by Lochner. Due to underlying sand and gravel deposits that increased the possibility of flooding and the subsequent cost of stormwater control, depressed freeways generally were found to be impractical.

In a restudy of the South Route in May of 1963, an intensive investigation of right-of-way, drainage and access control factors indicated that an elevated facility on embankment would provide considerable savings over a depressed facility. Subsequent studies of the Northwest and East Routes also recommended elevated facilities on embankment. As a result of the relative locations of railroad crossings, arterial streets, conduits and viaducts, an elevated freeway on structure and embankment was found to be the more economical for the Inner Belt. A report in October of 1962 by Lochner had also concluded that the freeway on structure was the most desirable for the north leg of the Inner Belt.

In November of 1964, the high cost of borrow in urban areas led to another study of a depressed facility for a portion of the east leg of the Inner Belt despite the railroad, utility and drainage problems. The study concluded that a depressed section south of Washington Street and east of East Street would result in a net savings of approximately \$2,200,000 for the Inner Belt. Although the

depressed facility would cost more than an elevated facility for that portion of the Inner Belt, the utilization of the depressed facility in this location for borrow for other portions of the Inner Belt resulted in a reduction in overall cost for the Inner Belt.

Inner Belt Design. After the initial design of the Inner Belt in 1956, numerous alternative interchange locations and designs were considered. By 1963, the original conditions assumed in the preparation of the studies had changed due to the consideration of additional local facilities, the development of a thoroughfare network and the modification of the Official Thoroughfare Plan for the metropolitan area, the modification of the CBD Circulation Plan, and the extension of the design year from 1975 to 1987. Consequently, the Inner Belt design went through an extensive revaluation in 1963. In August of 1966, Lochner reported on the design criteria utilized and the studies conducted in his development of the preliminary roadway and bridge plans for the Inner Belt. After 1966, the final plans were completed with only minor modifications to the 1966 design.

The evolution of the Inner Belt design was characterized by changes to improve efficiency and safety for the user and to insure continued compatibility with local transportation planning. A revaluation of traffic assignments resulted in a substantial increase in traffic over that originally anticipated. To provide the additional capacity needed, the Indiana State Highway Commission requested that additional lanes be initially constructed on the Inner Belt. The Bureau of Public Roads for initial construction approved six lanes instead of four for the north leg in July of 1963 and the south leg in March of 1966, and eight lanes instead of six for the east leg.

The Indiana State Highway Commission utilized the maximum lateral clearances for bridges that were eligible for Federal Aid Interstate fund participation in the design of the Inner Belt and pressed for shoulder width structures without limitations. The Bureau of Public Roads denied Interstate participation in the cost of shoulder width structures on the northeast and southeast system interchanges contending that Interstate connections (referred to as ramps in the plans) were subject to lower lateral clearance standards and that traffic volumes on the ramps had not reached the minimum level needed to justify shoulder width structures.

In April of 1966, the Indiana State Highway Commission requested shoulder width structures on the northeast and southeast system directional ramps stating that they served the through traffic as a continuation of the mainline. Although one ramp did not meet minimum volume requirements, the Indiana State Highway Commission felt that uniformity of cross sectional treatment should govern. They based their request on safety as successive bridges on the directional ramps were often less than 200 feet apart and shoulder width structures on the directional ramps were necessary to insure uniform cross sectional treatment. Furthermore, the construction of bridges with restricted clearances would create traffic hazards and points of high accident potential.

The additional cost of providing full shoulder width structures was small when compared to the overall cost of the Inner Belt and to the funds currently being expended to correct designs which had safety deficiencies. According to a 1965 instructional memorandum, the Bureau of Public Roads still could not participate in shoulder width structures.

The Indiana State Highway Commission, however, designed the structures at shoulder width because revised bridge standards were being proposed for adoption by AASHO. In the event that AASHO did not vote favorably on the proposed revised bridge standards, the Indiana State Highway Commission would have had to bear the cost of the design work.

Ultimately, a revised BPR instructional memorandum of bridge width standards of November 3, 1966 allowed the approval of shoulder width structures on the directional ramps of the Inner Belt freeway interchanges. [Refer to Figure 70, p. 464].

North Leg Inner Belt Design. The general design requirements for the north leg of the Inner Belt were (1) an adequate connection between the north leg and the west leg two one-way streets to prevent overloading of the north leg ramps and to permit the west leg to distribute traffic to the west side of the CBD, (2) minimal interference with the north-south arterials between Senate Avenue and College Avenue that provided access to the CBD from the north, (3) accommodation of the 11th Street Thoroughfare which would allow east-west traffic to bypass the CBD, and (4) ramp connections consistent with the CBD circulation plan.

The utilization of a directional interchange at the west end of the north leg of the Inner Belt provided an adequate connection between the freeway and the west leg one-way couplet. Directional ramps also were developed that provided connections to and from the north and east for the west leg one-way pair of streets.

In October of 1962, Lochner conducted a study to determine the type of construction of the north leg: depressed, elevated on fill, or elevated on structure. A depressed roadway was found to be impractical due to drainage, excessive utility relocation, and disruption of the north-south arterial traffic flow during construction. The soil conditions and high water table would have required a very costly drainage system to keep a depressed freeway dry. The

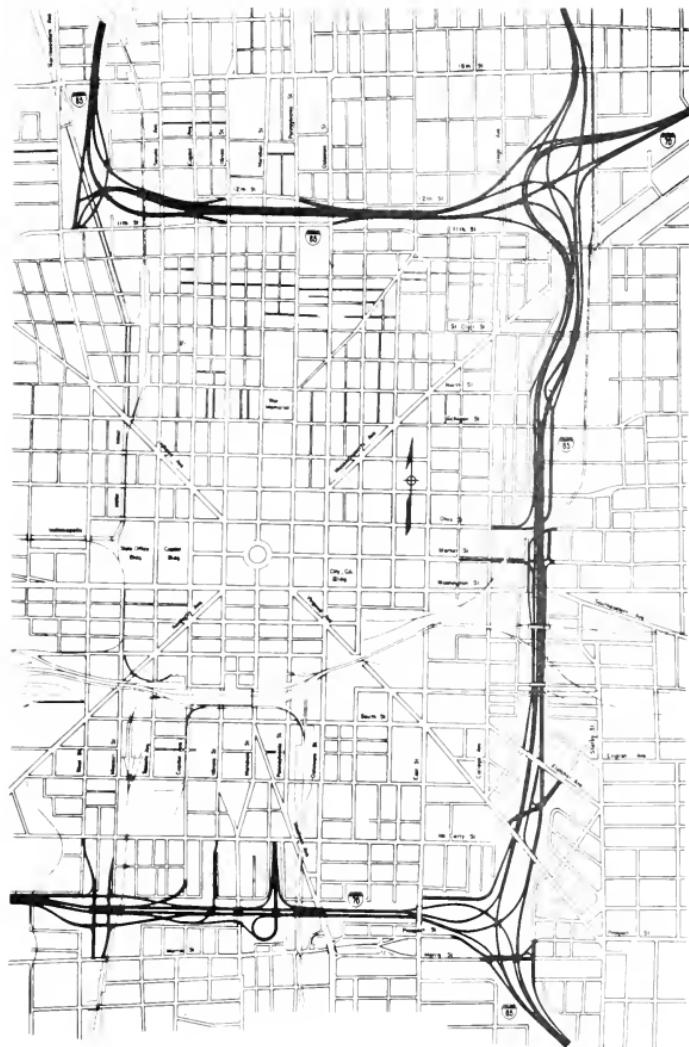


FIGURE 70. INDIANAPOLIS INNER BELT DESIGN IN 1970

fact that the 11th Street corridor was used as a major location for all utilities in the urban area meant utility relocation for a depressed facility would be extremely expensive. A roadway on fill was found to be expensive due to the high cost of borrow and long hauling distances. Consequently, a roadway on structure was found to be most economical, would require the least amount of utility relocation, and would minimize interference with north-south arterial flow during construction.

In Highway Transportation for the Indianapolis Metropolitan Area in 1957, the consultant revealed a possible conflict between a 10th-11th Street Thoroughfare plan and the Interstate Freeway as they passed through the same corridor. The 10th-11th Street System was planned as an east-west thoroughfare to be developed across the county to complement the east-west thoroughfares at 30th Street and at Michigan-New York Streets. Because of the necessary arrangements of the freeway ramps, it was not possible for the 10th-11th Street traffic to use the Interstate where the two routes were in the same corridor. The consultant felt the 10th-11th Street System must be retained as a surface route for traffic to and from the freeway and for the diversion of through traffic from the Michigan-New York Street pair that passed through the CBD.

Several alternatives were studied to resolve the 10th-11th Street Thoroughfare problem. Placing the thoroughfare under the freeway viaduct was not considered feasible because the close proximity of ramp and thoroughfare intersections on the north-south arterials resulted in insufficient storage space between the intersections. The city suggested the utilization of 11th Street for the thoroughfare; however, the close proximity of ramp and thoroughfare intersections again caused interference with traffic flowing to and from the freeway. To solve the intersection problems, the

thoroughfare would have to be grade separated which the city could not afford.

Ultimately, Lochner developed a one-way frontage road system designed to collect and distribute traffic from the freeway to the CBD and to serve the through movements of the proposed thoroughfare. As adopted by the Highway Coordinating Committee of Marion County, the scheme utilized the existing pavement of 11th Street as the eastbound lanes of the proposed thoroughfare combining them with a collector-distributor roadway for the ramps on the south side of the freeway; utilized the existing pavement of 12th Street as the westbound lanes of the proposed thoroughfare combining them with a collector-distributor roadway for the ramps on the north side of the freeway; and provided connectors from the termini of the north collector-distributor road and 12th Street to existing 11th Street to maintain the continuity of the thoroughfare.

The integration of collector-distributor frontage roads and the thoroughfare eliminated the need for a grade separated thoroughfare, provided sufficient space for vehicle storage, and allowed flexibility of access to the core and to the north of 12th Street. On the basis of later IRTADS recommendations, however, Indianapolis moved the thoroughfare from 11th Street to 10th Street, thus eliminating major conflict between the freeway and the thoroughfare and the need for connectors from the termini of the north one-way frontage road and 12th Street to 11th Street to maintain the continuity of the thoroughfare.

Although the CBD circulation plan was a prime consideration in locating the ramps on the north leg, the operating characteristics of the freeway severely restricted the possible ramp locations. Weaving distances precluded ramps west of Illinois Avenue and east of Delaware. The design that was finally adopted was a split-diamond with one-way

at grade collector-distributor roads as shown in Figure 70, p. 464. This ramp arrangement led to a modification of the CBD Circulation Plan as proposed by IRTADS in 1968; the proposed Alabama-Delaware one-way pair was replaced by the Delaware-Pennsylvania one-way pair.

Northeast Inner Belt Master Interchange. The location of this interchange was limited by the alignment of the four legs of the interchange, the location and elevation of the Norfolk and Western Railroad tracks, the location of the Coca Cola Bottling Plant at 10th Street and Massachusetts Street, the location of the Omar Bakery Plant at 19th Street and Bellefontaine Avenue, and the proposed location of the 10th Street Thoroughfare west of the railroads. The vertical geometrics of the interchange were controlled by the elevation of College Avenue, 16th Street, the Monon Railroad tracks and the proposed 10th Street Thoroughfare. The warehouse spur along Davidson Street, which severely restricted interchange geometrics, was eventually eliminated through extensive negotiations with the railroad and property owners. The elevation of the sewer to be used to drain the interchange to Fall Creek precluded depression of the interchange.

General design requirements included directional roadways to serve through traffic and collector-distributor roadways to serve terminating traffic. The separation of through and terminating traffic was necessary to solve weaving problems. Alternative configurations of the interchange studied generally involved the addition and deletion of collector-distributor roads.

The May of 1963 design utilized collector-distributor roadways for terminating traffic in the northern section of the east leg and to the Pennsylvania ramp of the north leg. However, the design was considered too complex and involved a large degree of indirection for the through roadways. The

consultant was asked to consider elimination of the collector-distributor roadway on the east side of the east leg. The Bureau of Public Roads noted that the additional cost of providing the east side collector-distributor roadway did not result in significantly improved traffic operations.

Upon reconsideration, the consultant eliminated the east side collector-distributor roadway; this allowed a more compressed interchange design with only a slight reduction in the overall level of service.

Several studies were prepared to determine whether Massachusetts Avenue or 10th Street should be separated at the northeast master interchange. With the importance of continuity for the 10th Street Thoroughfare and the resulting skew of a proposed Massachusetts Avenue separation, a separation of 10th Street which would also serve Massachusetts Avenue was favored.

East Leg Inner Belt Design. The alignment of the east leg was controlled by the New York Central, Norfolk and Western, and Monon railroad tracks; the Coca Cola Bottling Plant; Pogues Run Conduit, the intersection of Southeastern Avenue and Washington Street; and St. Patrick's church and school complex on Virginia Avenue between Pine and Davidson Streets. Numerous railroad crossings and the Pogues Run Conduit precluded the possibility of a depressed freeway north of Washington Street.

The general design requirements for the east leg included access to the CBD for destinations in the northeast quadrant between 11th and Michigan Streets, in the area adjacent to the core between Michigan and Washington Streets, and in the industrial and wholesale district between Washington and McCarty Streets; access to areas east of Pine Street for destinations between Massachusetts Avenue and Michigan Street, between Michigan Street and the Pennsylvania Railroad tracks, and between the Pennsylvania Railroad tracks

and Raymond Street; collector-distributor roadways to reduce the weaving problem by separating the through and terminating traffic; and the utilization of Ohio and Market Streets for access to the core as recommended in the CBD Circulation Plan. Various collector-distributor roadway features and ramp locations were evaluated in relation to these requirements.

Initially, at-grade collector-distributor roadways were considered along the alignment of Davidson and Pine Streets; however, their operation was considered objectionable because the heavy loading of intersections with the east-west arterials in close proximity to the distributor road intersection with College Avenue reduced the capacity of the east-west arterials. Grade separated collector-distributor roadways on both sides of the east leg were recommended by the consultant in May of 1963 to remove weaving operations from the through roadways.

Later Lochner was asked to study the feasibility of eliminating the east side collector-distributor roadway because its high cost was not felt to be compatible with expected operational improvements. This and other studies resulted in a number of changes. The west side collector-distributor roadway was eliminated south of Fletcher Avenue to simplify the southeast master interchange. The east side collector-distributor roadway was completely eliminated by weaving northbound traffic on ramps to eliminate weaving on the through lanes.

The latter modification involved the relocation of the Virginia Avenue-Cedar Street northbound on ramp so that the movement would enter the through lanes on the left-hand side eliminating the weave with the movement exiting at Market, the utilization of Pine Street as a frontage road to collect and carry northbound traffic from the CBD via Ohio and New York Streets and from the east of Pine Street to the Michigan Street on ramp; and the elimination of the Michigan

Street on ramp conflict with through traffic by having the Interstate 70 eastbound movement enter from the right and the Interstate 65 and Northeast Freeway movement enter from the left.

As presently planned, traffic destined for the northeast quadrant of the CBD and areas east of Pine Street are served by the North Street ramp. The Ohio Street off ramp serves southbound traffic destined for the core. The Fletcher Avenue southbound off ramp serves traffic destined for the southeast quadrant of the CBD and for areas east of Shelby Street and south of the New York Central tracks. The Buchanan Street southbound off ramp serves destinations along East Street south of McCarty Street. The only northbound exit is Market Street which serves the core and areas east of Pine Street.

Providing access to the northbound freeway, the Michigan Street on ramp serves traffic from the east along Michigan Street and from the core via the Pine Street frontage road. The Cedar Street and Virginia Street northbound on ramps serve traffic from the southeast quadrant of the CBD and from the area east of Shelby Street and south of the New York Central tracks. As suggested in the 1957 transportation study, continuity of the English Avenue-McCarty Street Thoroughfare was assured; however, Cedar Street was separated rather than a proposed extension of English Avenue to implement the recommendation.

Access to the southbound freeway is provided by the Market Street ramp for the core and by the Ohio Street ramp for the areas east of the Freeway. Due to the inadequate underpass of the New York Central Railroad and the proximity of the Cole Company buildings, several studies were undertaken to determine the most economical and practical design for the Market Street southbound on ramp. Ramp alternatives going over the New York Central underpass were compared with the cost of reconstructing the New York Central underpass to adequate width.

The ramp alternative starting east of East Street and overcrossing Pine Street, College Avenue, the New York Central tracks and the Ohio Street southbound on ramp proved to be the most economical because it eliminated the need to reconstruct the railroad underpass and to intersect with College Avenue, maintained local access to the industrial buildings on Davidson and Market Streets, and minimized property damage to the industrial buildings in the area.

Southeast Inner Belt Master Interchange. The location of the southeast interchange was limited by the alignments of the three legs and by developments consisting of St. Patrick's church-school complex and the shopping facilities of Fountain Square and Virginia Avenue. General design requirements included directional ramps for the through movements, access to the Prospect Street-Morris Street one-way pair serving the Madison Avenue Expressway and the area east of Shelby Street, and access to East Street.

The May of 1963 design included collector-distributor roadways for the east and south legs. The complexity of the interchange was subsequently reduced when the collector-distributor roadways were eliminated. The final interchange design is a standard three leg directional interchange without collector-distributor ramps with the southbound to westbound Interstate 70 ramp braided with the northbound Interstate 65 to westbound Interstate 70 ramp to reduce weaving.

Ramps to East Street from the north and to the Prospect Street-Morris Street one-way couple involved considerable study and discussion. The ramp to East Street from the north was finally located just south of Buchanan Street. Prospect Street was relocated to the south adjacent to Morris Street and a half-diamond interchange was approved to serve the Prospect Street-Morris Street one-way couple.

South Leg Inner Belt Design. Factors controlling the alignment of the south leg included the industrial development east of the White River between Morris and McCarty Streets and the location of the interchange between the Madison Avenue Expressway and the Prospect Street-Morris Street System. The crossing of three railroads and the Madison Avenue Expressway precluded the depression of the south leg west of High Street. General design policies required access to the west leg one-way couple and access to the CBD in accordance with the CBD Circulation Plan.

The initial design utilized Ray Street and Wilkins Street as one-way, at-grade collector-distributor frontage roads connected to the freeway by ramps at West Street and Madison Avenue; however, the scheme was undesirable because the ramps at Madison Avenue were in close proximity to the Madison Avenue Expressway/Prospect Street-Morris Street System interchange, the east ramp terminals caused heavy weaving in the southeast interchange, the twelve intersections on the frontage roads impaired their operation, and adequate connections to the west leg one-way couple were not available.

The May of 1963 design featured grade separated collector-distributor roadways on both sides of the freeway with connections to the freeway by ramps west of West Street and east of Pennsylvania Street and ramps to and from the east at Madison Avenue. After a restudy of the design in July of 1963, the collector-distributor roadways were eliminated by braiding the east ramps of the west leg full diamond interchange with the ramps from the west to Illinois Street. A trumpet interchange provided all movements for Pennsylvania Street assuming the city would extend Pennsylvania across Madison Avenue.

When the recommendations of IRTADS were published in 1968, the westbound on ramp at Illinois Street was shifted to Capitol Avenue in accordance with the CBD circulation plan.

In February of 1966, the Indiana State Highway Commission requested additional lanes for the south leg of the Inner Belt and appropriate revisions in the number of lanes in the southeast master interchange. New developments in the central business district and along the corridor of the West Route of Interstate 70 had resulted in an upward revision in traffic estimates. The revised estimates documented the need for the initial construction of six lanes rather than the initial construction of four lanes with sufficient median width for possible future expansion to six lanes.

West Leg Inner Belt Design. Although an Interstate improvement along the west side of the CBD was infeasible, a local improvement connecting the north and south legs of the Inner Belt was recommended to assist in the distribution of traffic to the CBD. In June of 1961, Lochner recommended the utilization of a one-way couple based on a comparison of the initial costs of an at-grade expressway, a major thoroughfare, and a one-way couple. A one-way couple was approved which utilized the alignments of California and West Streets north of Maryland and Georgia Streets, and West and Missouri Streets south of Maryland and Georgia Streets. The one-way couple was to consist of two four-lane carriers without grade separations. Since the one-way couple was to be given direct access to the Inner Belt, the one-way couple completed the Inner Belt ring and assured better distribution of traffic to the central area.

West Route Design. The major design changes on the West Route of Interstate 70 involved interchange location and spacing in the suburban area. The diamond interchanges at Morris Street and Tibbs Avenue were replaced by a single

diamond interchange at Holt Road. The half-diamond interchanges at Bradbury Avenue and Lynhurst Drive were replaced by a par-clo interchange with all movements at the Airport Expressway along the alignment of Bradbury Avenue. The diamond interchange at Belmont Avenue was also eliminated to improve freeway operational characteristics.

In the relocation of these interchanges, the Bureau of Public Roads required commitments from Marion County and the City of Indianapolis to improve Holt Road and the Airport Expressway to logical termini. The Airport Expressway was extended east to Holt Road concurrently with the construction of the Interstate 70 interchange in accordance with the local commitment. A commitment was also made to extend the Airport Expressway (Raymond Street Expressway) to SR 37 within five years of the completion of the Interstate 70/Airport Expressway interchange. Marion County also made a commitment to improve Holt Road from Interstate 70 northward to US 40 before Interstate 70 was opened to traffic from Interstate 465 to Holt Road concurrent with Interstate construction.

The Interstate 70/Harding Street Expressway (relocated SR 37) interchange has been subjected to considerable design revision. The interchange required a portion of the northeast corner of Rhodius Park necessitating the submission of a Section 4(f) statement. Since the highway required less than one percent of the park land and did not disrupt the park facilities, approval of the route location was obtained.

The interchange design at this location evolved from a figure eight directional interchange to a rotary directional interchange in 1969 to a par-clo interchange in 1972. The city was asked to make a commitment to construct the Harding Street Expressway from the Interchange with Interstate 70 to US 40 and to reserve right-of-way for the expressway from

the interchange with Interstate 70 south to the Raymond Street Expressway; however, public opposition to the Harding Street Expressway created considerable problems.

At the August 27, 1970 corridor hearing for the Harding Street Expressway, there was considerable local opposition to the construction of the facility. To prevent further delays in constructing Interstate 70, the Indiana State Highway Commission recommended the construction of Interstate 70 through the interchange area on embankment.

The Federal Highway Administration concurred in the recommendation providing that provisions were made to omit the portion of Interstate 70 on embankment through the interchange area from the construction contract if the local situation was resolved, that the city and State take immediate action with citizen participation to modify the Harding Street Expressway proposal, that the interchange be shown as a part of initial construction if Federal Aid Interstate participation is desired, that any future interchange be constructed before completion of the Interstate System to receive Interstate funding, and that the State reimburse the Federal government for the cost of removing the embankment and pavement when the structure is built in the future.

South Route Design. In keeping with the approximate two-mile spacing of interchanges in the suburban areas, the diamond interchange at Troy Avenue was eliminated. The interchanges retained along the South Route were located at Interstate 465, Keystone Avenue, Raymond Street, and the Morris Street-Prospect Street Couple. Indianapolis made a commitment to pay for two of the four lanes through the interchange area for Keystone Avenue because only two lanes existed on Keystone Avenue at the time of construction of this interchange.

East Route Design. A reevaluation of the interchange spacing on the East Route of Interstate 70 led to the elimination of interchanges at Columbia Avenue, Sherman Drive, and Arlington Avenue. The Rural Street and Emerson Avenue interchanges were retained. The interchange with Shadeland Avenue (SR 100) was also eliminated in the 1960 Interstate Cost Completion Estimate because of its proximity to the interchange with Interstate 465; however, the interchange at Shadeland Avenue was reconsidered because Shadeland Avenue intersected with other major arterials, served as a bypass, and connected residential, commercial and industrial areas not served by other arterials.

To justify the proposed Shadeland Avenue/Interstate 70 interchange, an origin and destination study was conducted to determine the trip making patterns of the thirty major traffic generating establishments in the vicinity of the proposed interchange. The area was divided into twelve zones and the trips assigned to the most logical routes. To reflect the reduction in operating cost and travel time with the interchange, a benefit-cost ratio was developed that compared user benefits with and without the proposed interchange.

With strong public support for the interchange and documentation of substantial local benefit from the interchange by the Indiana State Highway Commission, the Bureau of Public Roads approved the addition of the Shadeland interchange to the East Route of Interstate 70 in September of 1963. The operational problems resulting from the proximity of the Shadeland Avenue interchange to the Interstate 465 interchange were resolved by the utilization of a par-clo interchange with the ramps west of Shadeland, thus providing adequate weaving distances between the two interchanges. A collector-distributor system for local terminating traffic had initially been considered between the two interchanges,

but was discarded in favor of the more economical parclo interchange for Shadeland Avenue.

Indianapolis and Marion County had to make commitments to improve nearly every interchange crossroad to adequacy for traffic using the Interstate and every grade separated crossroad where a greater number of lanes were desired than presently existed.

In the case of the Arlington Avenue grade separation, Arlington Avenue was classified as a six-lane Primary Thoroughfare in the Official Thoroughfare Plan of Marion County; however, the initial separation structure design provided clearance for only four lanes. When the Indianapolis Mass Transportation Authority provided documentation that travel volumes justified four lanes in 1965 and would justify six lanes in 1975 and agreed to purchase right-of-way to logical termini for the future six-lane construction, the Bureau of Public Roads approved Federal Aid Interstate fund participation in the additional length of the separation structure to accommodate the future six-lane facility.

Since the Mass Transportation Authority provided a commitment to improve Emerson Avenue to six lanes beyond the interchange with Interstate 70 from Raymond Street to 38th Street, the Bureau of Public Roads approved the construction of six lanes in the interchange area with Federal Aid funds. If the city constructs the Emerson Avenue separation of the New York Central Railroad concurrently with interchange construction, participation by Interstate funds will be available; otherwise, Interstate funds may only participate in the cost of construction to touchdown points.

As of October 26, 1971, Indianapolis had made no commitment to upgrade (within five years of Interstate construction) Rural Street to six lanes beyond its interchange with Interstate 70 to logical termini; consequently,

the Federal Highway Administration limited Federal participation to four lanes of pavement through the interchange area with sufficient bridge clearance for the future addition of an additional lane. In February of 1967, the Indianapolis Board of Public Works agreed to improve Rural Street to six lanes from its interchange with Interstate 70 north to 25th Street by 1977. The Bureau of Public Roads, however, considered this commitment inadequate because there was no improvements south of the interchange to a logical terminus and the year 1977 was not within five years.

The Indiana State Highway Commission utilized IRTADS volume projections to support 21st Street on the south and 25th Street on the north as logical termini for Rural Street improvement. The Bureau of Public Roads concurred with the proposed logical termini, provided that the intersection of 25th and 21st Streets (Boyd Avenue and Roosevelt Avenue) were improved. However, BPR still refused to participate in the construction of six lanes to the suggested termini without a formal commitment by the city to improve Rural Street to six lanes within five years of construction of the interchange as regulations require.

The Bureau of Public Roads agreed to the relocation of the Martindale Avenue separation and the provision of adequate horizontal bridge clearances to accommodate a future six-lane facility provided the city constructed the State Street-Martindale Avenue System by 1977.

Other commitments and design revisions too numerous to record were also made.

Northwest Route Design. Interchanges on the Northwest Route of Interstate 65 were also adjusted. The half-diamond interchanges at 23rd Street and 18th Street were replaced by a par-clo interchange with all movements at 21st street. The diamond interchange at Northwestern Avenue was replaced by a par-clo interchange confined to the west side of

Northwestern Avenue, and the northbound off ramp was eliminated. At the 30th Street-29th Street half-diamond interchange with ramps to and from the south, a northbound on ramp was added.

In June of 1963, the Indiana State Highway Commission requested the initial construction of six lanes on Interstate 65 from Cold Springs Road to the east leg of the Inner Belt rather than the initial construction of four lanes of a future six-lane facility. Due to the development of a one-way couple for the west leg of the Inner Belt, there was an increased travel attraction to the central area for local traffic. More refined traffic studies for Interstate 65 and 70 indicated higher volumes than originally anticipated, and more information on development near 38th Street indicated a rapid growth in major traffic generators in the corridor. The Bureau of Public Roads approved the initial six-lane construction for Interstate 65 on July 19, 1963 provided the West Leg facility was constructed within five years of the completion of the Interstate.

Due to local requests, the Indiana State Highway Commission provided a pedestrian overpass on Interstate 65 near Rader Street in the Crown Hill area and a pedestrian underpass near 24th Street in the Paris-Shriver Street area. A pedestrian crossing is also to be constructed near Emerson Avenue on the East Route of Interstate 70.

Public Interest. Many of the Interstate route locations in Indianapolis have been subject to considerable criticism. In most cases, much of the criticism occurred after a final location had been approved by the Bureau of Public Roads.

Public Hearings. Nine public hearings were held to determine the effect of the Interstate System inside Interstate 465. "The hearing examiner reported full support at each hearing from representatives of local business and industrial groups, local government, and several of the

local trade associations.³¹ Local utilities strongly opposed the depressing of the freeways because they feared they would have to bear the full cost of relocating affected underground utilities. The Utility Relocation Act of Indiana, which changed this cost responsibility, was passed in 1961, after most of the public hearings had been held.

The major opposition group at the time of the public hearings was the Indianapolis Taxpayers Association. This interest group opposed the location of inner city routes on the grounds of decreased property values and ethnic considerations.

The first public hearing on an Interstate Route inside Interstate 465 was held on the segment of the Northwest Route of Interstate 65 from Northwestern Avenue to Guion Road on July 14, 1959. Local residents and the Riverside Golf Course opposed the route because of possible damage to Lake Sullivan as a waterfowl refuge. The location also passed through the predominantly Negro Crown Hill neighborhood, but these residents did not oppose the location at this hearing.

In forwarding the hearing transcript to the Bureau of Public Roads for approval, the Indiana State Highway Commission stated that the services of a landscape architect would be retained to insure that the excavations to secure borrow material for the highway would be made to enhance the Lake Sullivan area rather than cause any damage.

In further negotiations with the Metropolitan Park Board in 1966 and 1967, the following design provisions were made to minimize the adverse effect of Interstate 65 on the Lake Sullivan area: (1) the ponds of the Riverside State Fish Hatchery were to be filled; (2) Sullivan Lake was to be extended south to replace the area lost to the freeway; (3) adequate drainage was to be provided under the Interstate; and (4) frontage roads were to be constructed north

and south of the Interstate between Cold Springs Road and the White River Parkway to provide access to Sullivan Park. Interstate 65 was constructed through Sullivan Park in accordance with this agreement.

The public hearing on the portion of the Northwest Route from Guion Road to Interstate 465 was held on July 15, 1959. There was no serious opposition, and the proposed location appeared to be favorable.

The public hearing on the remainder of the Northwest Route from the Inner Belt to Northwestern Avenue was conducted on February 4, 1960. City, County, and Civic groups spoke in favor of the proposed location. However, the Indianapolis Taxpayers Association protested the location of the route because it might destroy property values and result in an influx of a different class of people in the middle class Negro neighborhoods. Opposition further noted that highway noise might add to the nervous disorder of individuals, that property payments by the State were inadequate to purchase replacement housing on the current market, and that the removal of property from tax rolls was of special concern. The utility companies opposed the depressing of the route because of increased utility relocation costs and disruption of service.

There was no opposition to the location of the north and east distributor legs of the Inner Belt at the public hearings of February 5 and 16, 1960. The utility companies again opposed the depression of both legs of the Inner Belt.

The proposed location of the south leg of the Inner Belt and West Route to Tibbs Avenue met with general approval in the public hearing of February 17, 1960. The utility companies suggested that the south leg of the Inner Belt be built on structure to minimize utility relocation costs. Since the West Route severed three school districts, the President of the Indianapolis School Board suggested a

relocation of the route along Oliver Avenue. The Traffic Engineer of Indianapolis suggested that consideration be given to the movement of children in the several school districts when designing the route.

The location of the remainder of the West Route from Tibbs Avenue to Interstate 465 met with opposition from the Drexel Gardens residents in the public hearing of February 25, 1960. The Drexel Gardens residents felt the route could be moved closer to Stout Field to better utilize vacant land. A suggestion was also made to relocate the route through Stout Field.

The Indiana State Highway Commission eventually requested H. W. Lochner, Inc. to study an alternate line for Interstate 70 through Stout Field. [Refer to Figure 71, p. 483]. According to the Lochner study of July of 1961, the alternate location through Stout Field would cost \$160,000 more than the recommended location and would create interchange connection problems with the Airport Expressway. Consequently, the Marion County Highway Cooperative Administrative Committee re-endorsed the original location of Interstate 70.

The public hearing of February 23, 1961 on the South Route of Interstate 65 was uneventful. However, in the design of the route special consideration was to be given to the connection of closed streets and to the effect on individual properties because this was the primary concern of the residents.

Public opposition to the Indianapolis Interstate Program had grown, however, since the first public hearing; and the public hearing of July 10, 1963 on the East Route of Interstate 70 (the last public hearing on an Interstate Route inside Interstate 465) was an arena of heated public criticism.

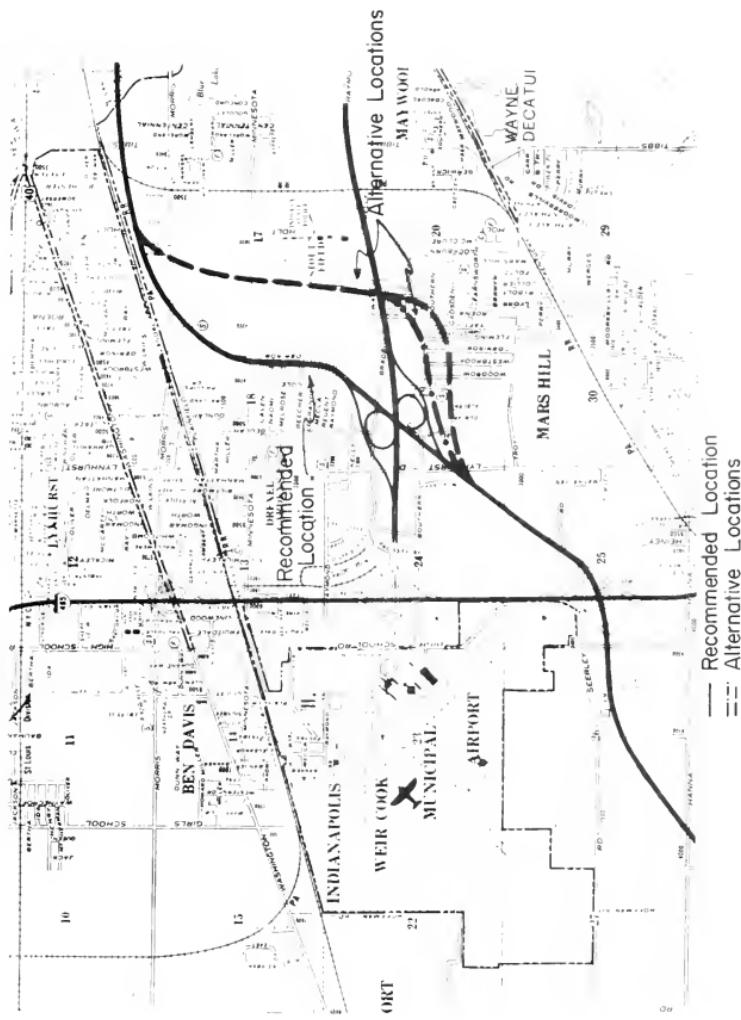


FIGURE 71. INTERSTATE 70 - WEST ROUTE : ALTERNATIVE LOCATIONS
THROUGH STOUT FIELD

The Chamber of Commerce and Bureau of Traffic Engineering of Indianapolis recommended an interchange at Shadeland Avenue (SR 100) to serve a sixteen square-mile area of rapidly expanding industrial, commercial, and residential land uses. The Chamber of Commerce conducted a post card interview of industry in the area bound by Emerson Avenue, US 40, SR 67, and Post Road to document the need for the SR 100 interchange with Interstate 70. According to the survey, the area accounted for twenty-four percent of the total Marion County manufacturing employment of which 53.6 percent would benefit from the proposed interchange.

As discussed earlier in this report, the Indiana State Highway Commission requested the addition of an interchange at SR 100 to Interstate 70 which was approved by the Bureau of Public Roads.

Additional opposition to the Interstate Program inside Interstate 465 was voiced by five Black ministers, the Indianapolis Taxpayers Association and the Hubbard Center Civic Club (representing the Paris Street-Shriver Street area) focused on resident relocation problems. Although the availability of relocation assistance was described at the hearing, those critical of the Interstate Program cited the inability of those displaced to find replacement housing because the payments for the acquired property were inadequate to purchase new housing.

Some speakers felt that suburbanites did not have the right to demand highways into the inner city that would destroy 5,000 dwellings because they did not pay taxes. They accused the designers of locating the routes in low income areas occupied by Black citizens and utilizing the routes to oppress the Blacks by forcing them to bear hardships; called the Inner Belt a barrier to segregate the CBD from the rest of the central city; and felt the Interstate Routes would disrupt social patterns and isolate areas of the city.

In reviewing the public hearing transcript, the Bureau of Public Roads suggested a cooperative effort by Federal, State and local agencies in securing satisfactory replacement housing for those displaced, noted that future construction of Interstate 70 could be seriously delayed by confusion and mistrust of the individuals involved without such cooperation, and stated that the public hearing revealed a concern for relocation of people within the corridor area rather than any serious objection to the location itself.

The location of the East Route was approved on July 30, 1963. The Indiana State Highway Commission also initiated an advanced land acquisition program on a willing seller basis to reduce the hardship to the dislocated in the early 1960's.

This hearing revealed the existence of interest groups formed by property owners affected by the Interstate locations, particularly along the Northwest Route, and was a harbinger of more extensive future opposition to the Indianapolis Interstate Program.

Continued Opposition. Opposition to the Indianapolis Interstate Program concentrated on the relocation of the Northwest Route and on the depression of all routes. In August of 1963, the Indianapolis Star began publication of editorials that criticized Interstate location planning and called for a reexamination of the Interstate planning in light of current facts. The Indianapolis Taxpayers Association petitioned Rex Whitton (Administrator of the Bureau of Public Roads) to stop construction of the Northwest Route. On October 23, 1963, candidate for mayor John J. Barton sent a letter to the president of the Hubbard Center Civic Club which opposed current planning of the Northwest Route and suggested the relocation of the Northwest Route along the alignment of proposed SR 37 (Harding Street Expressway).

Encouraged by the election of Barton, several prominent citizens and interest groups formed Livable Indianapolis For Everyone Inc. (LIFE) in December of 1964 to back Barton's proposed relocation of the Northwest Route (the so called Modified Plan) and to bring about the depression of the Interstate wherever possible, especially the Inner Belt. The Indianapolis Taxpayers Association, which had opposed all routes into the central city, joined the proponents of the Modified Plan.

In May of 1965, City Councilman Max E. Brydenthal expressed opposition to current Interstate plans and called for a public hearing on the Indianapolis Interstates. A public hearing was held on June 14, 1965 by Brydenthal and there appeared to be unanimous opposition to the Interstate plans. In July of 1965 Congressman Andrew Jacobs, Jr. called for a review of the Indiana State Highway Commission plans and went on record as favoring the Modified Plan and the depressed inner loop.

In August of 1965 Councilman Brydenthal, Representative Jacobs and LIFE requested that the Bureau of Public Roads order the Indiana State Highway Commission to revise the planning. Brydenthal also sought a resolution of the Indianapolis City Council. In December of 1965 the resolution passed in the City Council 7 to 1 and in the Marion County legislative delegation 20 to 1. The resolution urged the Mayor of Indianapolis, the Governor of Indiana and the State Highway Department "to lend their efforts to bring about the adoption of the Modified Plan in order that the physical attractiveness of the city be retained and enhanced, displacement of numerous families be avoided and substantial savings be effected on behalf of the State, county and city."³³ Later that month, Marion County's State senators and State representatives signed the resolution. Councilman Brydenthal stated he would seek the aid of Senators Hartke and Bayh in an appeal to the Bureau of Public Roads.

Mayor Barton had previously stated that he would do nothing about the resolution if it passed. Like his predecessor, Democratic Governor Mathew E. Welsh, Democratic Governor Roger D. Branigan supported the Indiana State Highway Commission and refused to take action on the resolution.

Since forty percent of the property had already been acquired and over one hundred parcels cleared on the Northwest Route between 38th Street and the Inner Belt by December of 1965, some felt the opposition hoped for a compromise: giving up the Modified Plan if the north leg of the Inner Belt would be depressed.

There was no compromise, however, because the October of 1962 study by H. W. Lochner, Inc. had compared all possible treatments of the north leg and had found the freeway on structure the least expensive. In addition to cost, the Indiana State Highway Commission noted that consideration was given to utility relocation and the problems of drainage and maintenance of traffic. Depressing the north leg of the Inner Belt would have placed the roadway below the water table, necessitating an elaborate pumping system.

The location of the Northwest Route and Inner Belt were approved by the Bureau of Public Roads and Cooperative Highway Committees of Marion County in 1959 and 1960. With the approval of the locations, the design of the routes in question had progressed to the point that right-of-way was being acquired in 1963. By 1965, the design had progressed to the point that any major revision would have caused more than five years of delay and jeopardized the construction of the routes with Interstate funding.

COVER DESIGN BY ALDO GIORGINI